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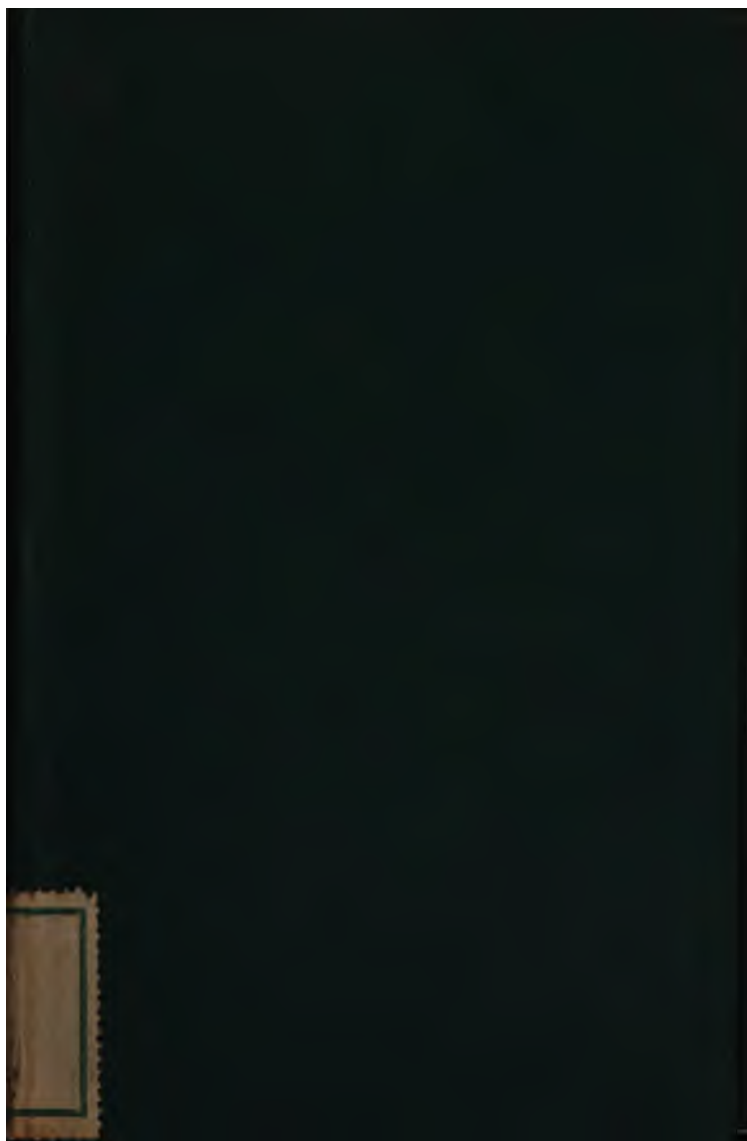
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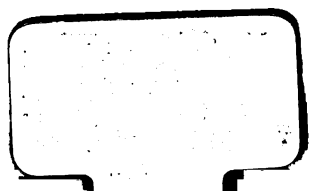
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MORNING
CONVERSATIONS

OF

A GOVERNESS AND HER PUPILS;

OR,

AN ATTEMPT TO SIMPLIFY

THE LINNÆAN SYSTEM

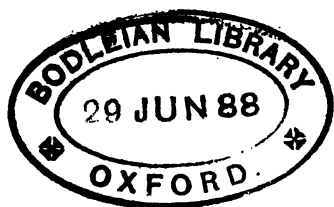
OF

ZOOLOGY.

London :

**PRINTED FOR HARVEY AND DARTON,
GRACECHURCH-STREET.**

1830.



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MORNING CONVERSATIONS,

&c.

CHAPTER I.

“MY dear children,” said Mrs. M'Ivor to her three daughters, as she seated herself at the breakfast-table, “the letter I have in my hand is from a lady who has consented to become your friend and instructress, and to supply my place in the cultivation of your minds, and the correction of your many faults and bad habits; which, from the little attention my ill state of health allows me to pay to you, I grieve to say are daily gaining ground, and making yourselves and all about you very unhappy.”

“What will she do to us, mamma?” said Fanny, the second girl: “will she be always scolding us?”

“I hope not, Fanny, as that can only arise from your own misconduct ; and surely you do not intend always to behave as you have done lately. Miss Angerstein will, I am aware, be very firm with you ; but that she will be *always scolding you*, I very much doubt. But where is Elizabeth ?”

Jane, Emily, and Fanny coloured, looked at each other, and were silent, till their mamma repeated the question, when Emily said she believed she was not come in from her walk.

“What ! have you not all been out together ?”

They were all again silent. At last Jane said, “Mamma, we—we did not like to go the way she wished.”

“Why not, my dears ? Why did you not yield to her, if she had any good reason to assign for not conforming her will to yours. I must enquire into this. It is not like Elizabeth, to be so unaccommodating.”

“Dear mamma,” said Emily, “it was our fault ; for Elizabeth wished to carry some milk to Martha Pierce, and we would not go that way, it was so dull : so she got Katharine to go with her, and we staid in the shrubbery.”

“Then, Emily, you did very wrong ; for did I not particularly desire you all to walk together ?”

"Yes, mamma, and so we do—sometimes."

Elizabeth now entered, and apologized for having exceeded her usual walk, by saying that she had taken poor Martha her cup of milk, and hoped her mamma would allow her to do so every morning; as the Pierces had no cow, and milk was what Martha much wished for.

"I have not the least objection, my child; but you must contrive to be up earlier, so as not to be too late for breakfast, as you find you are this morning. Your new governess, Miss Angerstein, will be here on Thursday, Elizabeth."

"So soon, mamma! Oh! then I fear I shall not be able to go every morning with the milk."

"Why not? I dare say Miss Angerstein will not object to walk that way sometimes; and when you cannot go, you must get Roderick to take it."

"Oh! but governesses are such cross things, mamma."

"You all seem to have imbibed very erroneous ideas respecting governesses; but I hope a few weeks will do away all such impressions. Under the care of a kind, intelligent, and judicious one, I spent many happy years; and it is not to destroy

your enjoyments, but to increase your ultimate happiness, that I am now endeavouring to secure for you the same advantage."

"But why will you not continue to teach us, mamma? I am sure I should like it much better."

"Perhaps so, Elizabeth; yet, as my own health is so indifferent, and your grand-mamma requires every day more of my attention, from her increasing infirmities, I trust you will all recollect that Miss Angerstein is to supply my place in every thing that concerns you; and must receive from you, in return, every mark of respect and affection."

"Affection! mamma," exclaimed Jane; "why who can love a governess? Nurse says she will never allow us any time to amuse ourselves; but, when we go out, will make us walk with our toes turned out, and heads up, as though we were to be soldiers; and she is sure she will never let us run and jump about as we now do with her. Oh! I know I shall be very unhappy. How I dread to see her. Pray, mamma, is she pretty?"

"Not at all, my dear; but she is very sweet-tempered, amiable, and accomplished; and will, I am sure, make you much happier than you expect, if you behave as you ought to do. You

cannot suppose I should consider *beauty* a *necessary* quality in any lady ; and, in a governess, it is the *head* and *heart* that must be looked to, not the person. I must beg you will not attend to every foolish thing nurse may tell you concerning governesses, as I do not think she is quite a competent person to judge or to decide upon the merits of such a case ; but wait till you can see and judge for yourself, or else depend upon the opinion of those who are better informed on the subject than either you or nurse can be."

"Did you ever see this lady, mamma?" asked Emily.

"Yes: I saw her at the house of a mutual friend, when I was in England two years ago ; and though I had no thought of having a governess for you, at that time, yet I was then so much pleased with her, that I am very glad I have been so fortunate as to prevail on her to come so far from all her friends as Inchcairn ; and I trust she will never have occasion to repent of having acceded to my proposal. But this will much depend upon you all."

"How so, mamma?"

"Because the greatest part of a governess's time is passed with her pupils, who, if they are

obedient, attentive, and affectionate, lighten the toil of instruction, and attach their governess to them; but should they be perverse and self-willed, they weary her patience, exhaust her health and strength, and destroy her spirits. You must consider, that it is your duty to contribute to her happiness, by every means in your power, as much so as it is hers to instruct, admonish, and correct you."

"But, mamma," said Jane, "it is her duty to instruct us, because she is paid for it. Now, she will not pay us for behaving well."

"My dear Jane, no sum of money, however great, can repay any one for the toil and anxiety which every instructress must experience, in the faithful discharge of her many and arduous duties. The only way to repay so great an obligation, is, for every member of the family, young and old, to feel those sentiments of affectionate respect, esteem, and gratitude towards her, which her conduct will naturally inspire, in sensible and well-disposed minds. In the same manner, if you behave well, you will not only feel that inward satisfaction arising from the consciousness of doing one's duty, which is in itself a sufficient reward, but you will also receive every mark of

affection and regard from your governess, your parents, and friends."

"I am sure, mamma," said Elizabeth, "I wish for nothing so much as to please you and dear papa; and I hope I have succeeded better lately, for I have really tried as much as possible. I have avoided saying any thing to my sisters that might displease them; and had not poor Martha been so very ill, I would have gone any way they pleased this morning. But Roderick was gone to Inverness, and there was nobody else to send with the milk."

"You certainly have, my love; and it is with great pleasure that your papa and I have witnessed the many victories you have lately gained over your impatience and ill-humour. Continue then to struggle with those imperfections which prevent your becoming amiable, and you will every day find less and less difficulty in conquering them, till habit renders the task not only easy but delightful."

Breakfast being now over, Mrs. M'Ivor desired her daughters to get to their different employments, while she went to their grandmamma. They therefore retired into the study; but their minds were so full of their *new governess*, that

every thing was very indifferently attended to ; and when their mamma returned to them, she expressed her displeasure at the very careless way in which Elizabeth and Jane had done their exercises, and Emily and Fanny learnt their lessons ; and desired that they might all be written and learnt again, as soon as they came in from their walk in the chestnut avenue. They then put on their bonnets, tippets, and gloves, and joyfully escaped from books, pianoforte, and slates, to the unrestrained conversation about what so completely occupied their attention.

“ I dare say,” said Jane, “ she is coming with papa and aunt Katharine ; for, if you recollect, papa said, in his last letter, that he should certainly be home on Thursday : and this disagreeable Miss Angerstein is, no doubt, coming with them. I am sure I shall never be so happy with her, as I have been with good old nurse.”

“ I long to see her,” said Fanny, the youngest girl. “ If she is cross-looking, I shall dislike her very much ; but if she is good-humoured, why, perhaps, we may not be so very unhappy as we expect ; and then I shall love her, when I am a good girl. Won’t you, Elizabeth ?”

“ Oh ! yes, I shall try to love her at all times,

and to do all I can to please her ; and then she will love me, and be kind to me. And, sisters, do pray do the same : and see whether that will not make us all more comfortable than we even now are ; for you all quarrel so, that I do not think you are very happy."

- We will now leave them to their amusements, while we make our young readers acquainted with the several persons who composed this family. Mr. M'Ivor was a gentleman of good family, who had spent his youth in the East Indies, but having acquired a considerable fortune by the death of an uncle, he had returned to his native country in the prime of life ; married a sensible, amiable young lady ; and settled on his paternal estate in the north of Scotland. At the time we are now speaking of, they had five children : Alexander, Elizabeth, Jane, Emily, and Fanny. Alexander, who was just thirteen, had been partly educated at the academy at Inverness ; but his father was now gone to England, to enter him at Eton College. He was a fine, lively boy, rather impetuous in his temper, but sensible and affectionate ; and was much missed by his sisters, who always looked forward to Saturday afternoon with pleasure, as it generally brought Alexander home, if the weather

would permit, where he staid till early on Monday morning. But now, months must elapse ere they could again see him, and Saturday was by no means the happy day it had formerly been, for as yet they were not reconciled to his absence. Elizabeth was eleven years old, remarkable for the sweetness of her temper and steadiness of her disposition. She was not possessed of uncommon abilities ; yet she was able to learn every thing that was required of her, because she was attentive, and possessed great application, which often produces better effects than the most brilliant parts. She was unaffectedly pious and charitable, and never forgot that the poor and afflicted were human beings, who were as capable of feeling as herself, and who, though placed in different and less happy circumstances, were, notwithstanding, under the same protecting hand of Providence as she was. Jane, who was but a year younger, was the reverse of her sister. Impatient and irritable, she never passed a day without giving way to the impetuosity of her temper, which, from not being early checked, was daily becoming more ungovernable, and rendering her disagreeable to others and unhappy in herself. If her sisters proposed any amusement, she was

sure to find fault with it : did they wish to walk one way, she would immediately object, and insist upon going another. This produced many quarrels with her younger sisters ; but Elizabeth generally persuaded them to comply with Jane's wishes, and never herself opposed them, when they were not contrary to her duty. Emily very much resembled Elizabeth, but was more volatile and giddy ; and as she had not yet learnt to command her temper upon all occasions, her wishes very often clashed with Jane's. Fanny, the youngest, was a merry little girl, who had just completed her sixth year. She was not by any means pretty ; but she looked so good-humoured, and was, upon the whole, so ready to oblige, that she was a general favourite. Yet she was sometimes careless and forgetful, was apt to cry for trifles, and particularly impatient of contradiction ; which faults require constant watchfulness, or they will spoil the best dispositions. Unfortunately, Mrs. M'Ivor was very often too unwell to attend so much to her children as their different tempers required. She had, besides, another claim upon her time and attention, which she considered as superior to every thing else. Her

beloved mother, after an active and useful life, spent in the exact performance of every social duty, was now totally unable to amuse or assist herself, by a paralytic affection, which, while it left her mental faculties unimpaired, had deprived her of the use of her limbs. To this dear parent, to whom she owed so much, and who had always been her tenderest friend from her earliest infancy, Mrs. M'Ivor now devoted every moment of time she could spare from her other important duties as a wife and a mother. She recollected, with gratitude, the affection which had ministered to all her wants, when she was unable either to speak or walk; that had shielded her childhood from the many dangers to which that period of life is exposed; that had watched over her youth; had checked her faults with parental kindness, and cherished every symptom of virtue and goodness; and, in her maturer years, had shared, not only her joys, (which others might also have done,) but her sorrows too, and, by sharing them, had increased her happiness and mitigated her griefs. That she might, in some degree, repay such weighty and numerous obligations, she had determined upon engaging some one to assist her in the education of her

children, which would enable her to perform her filial duties, without neglecting her maternal ones, as she was aware she should act wrong by fulfilling one at the expense of the other.

Thursday at length arrived, and late in the evening, after much anxious expectation, and many fears for the travellers, a carriage was heard rolling up the avenue, and the children hastened to meet their beloved father and aunt, who, with Miss Angerstein, were soon conducted into the drawing-room, where the latter was received with the greatest kindness by Mrs. M'Ivor. When their joy was a little abated, the children were introduced to their *new governess*, who received their awkward civilities with much apparent good humour; and as she was extremely fatigued by her long journey, as soon as she had taken tea, she retired to her room, accompanied by Mrs. M'Ivor, who, after seeing that every thing was as she wished it, left her for the night.

CHAP. II.

A FORTNIGHT had passed since Miss Angerstein's arrival, without the young people feeling themselves so very unhappy as they had expected. Indeed, the sort of awe which, as a stranger, she had inspired them with, had prevented so many displays of peevishness and ill-humour as generally took place; and however troublesome Jane might choose to be with her nurse, she had not, as yet, shown her real character to her governess: consequently, Elizabeth had had the pleasure of carrying the milk to poor Martha, without receiving any opposition from Jane; and the younger children could amuse themselves in any way they pleased, unchecked by her discontent and ill-humour.

The morning was fine, and the whole party was assembled to begin their usual early walk, when Jane exclaimed, "How tiresome you are, Elizabeth, to confine us to that disagreeable walk by the burn-side, just to carry that milk to

Martha ! Do, pray ma'am, let us go some other way ?" addressing herself to Miss Angerstein.

" As I do not see the reasonableness of your request, Jane, I cannot comply with it. Of an evening, you have your turn in the choice of a walk, which is as much as you can expect ; and the morning walks are devoted to charity, at the same time that they contribute to health."

" But they are so dull. I do so hate these walks of charity, as you just called them. I see no charity in them. We give nothing to the poor, because we never see any: how, then, are they charitable ?"

" On your part, Jane, I cannot see any charity ; for you repine at being obliged to control your own wishes, to contribute to the health and comfort of a human being, formed of the same materials as yourself, as capable of feeling and suffering, labouring under a serious illness, and not possessed of the common comforts of life. Surely, my dear, you do not understand what is meant by *charity*."

" Oh ! yes, I do. It is giving money to those who have none of their own ; or giving bread or meat to the hungry."

“ Yes, that is one way of being charitable; but there are many others. For instance, the milk which Elizabeth is carrying to the poor little Martha, not being her own to bestow, is not properly *her gift*; but the motives which induced her to carry it are extremely charitable and praiseworthy, and are of more value in the sight of God, than the greatest donations could be, unaccompanied by the sincere wish of relieving the unhappy. And had you sacrificed your inclinations for a more agreeable walk, with cheerfulness, and felt a pleasure in assisting your sister in her benevolent plan, you would have been doing an act of charity, though you did not give any thing to the poor. For it is the *motive* from which your actions proceed, which makes them either good or bad; and even a kind word, or a compassionate tear, which flows from a benevolent heart, may convey much consolation to the afflicted; and when it arises from the principle of *love to God*, will come under the description of *true charity*. Do you understand me, Jane ?”

“ Yes, ma’am : but the milk would do Martha as much good if Roderick carried it, and then we need not take this tiresome walk every morning.”

“ Certainly : but as Roderick has too much to do to carry it always, your sister has undertaken to do so, that the poor child may not be disappointed of its breakfast ; and I highly approve of her humanity. Had she money to bestow, I am sure she would cheerfully do so, because she now gives the only thing at her disposal, the time allotted to recreation ; and I hope, Jane, you will think upon what has been said, and never complain of the *dulness* of this walk, when it is in your own power to enliven it, either by useful and entertaining conversation, or by reflecting that you are conveying that nourishment to a fellow-creature, which may not only restore her to health, but even save her life. For how many die in consequence of not having food enough to support the human frame, after it has been reduced by sickness ; and thoughtless as you are, I am sure you would shudder at the bare idea of withholding that small portion of nourishment which might preserve the existence of a poor little fatherless child.”

“ Oh, yes : but the Pierces, though poor, are not so destitute as that, I believe.”

“ I hope not ; but the mother has great difficulty in providing for her three children, and it is

your duty to assist her, if you have it in your power. You know she is not possessed of a cow ; and how little other food she may have, is not for me to say. But never defer doing a kind action to a suffering fellow-creature, because she is not in such an absolute state of starvation as to be reduced to the humiliating necessity of *begging*. A poor widow, struggling to procure a subsistence for her three fatherless children, is surely an object worthy of any assistance it may be in your power to bestow ; and I hope, Jane, I shall never hear you murmur, when any little plan is proposed for the alleviation of poor little Martha's sufferings, though it should clash with any more agreeable project of your own. You are not, naturally, of an unfeeling disposition ; but unless you conquer the *selfishness* which (I have observed with regret) induces you to consult your own comfort and pleasure, at the expense of that of others, and even of many positive duties, I fear your heart will become hard, and you will then lose one of the purest sources of happiness, that which arises from the feelings of humanity and benevolence."

Jane appeared by no means convinced by this reasoning ; but finding that it was useless to oppose

this *walk of charity*, she held her tongue, and proceeded sullenly on, while the cheerful Elizabeth chatted with her governess, and the two younger children gambolled about, happy in the possession of youth, health, and spirits.

As it had been found very inconvenient to carry a *cup* of milk, Elizabeth had bought a small tin can, with a cover and handle, so that she could now take the milk without being in danger of throwing it over her frock. Elizabeth had very little money to spend as she pleased, yet out of that little had she purchased this *can*, that Martha might not lose any of the milk from its being spilt, but might receive it almost as warm as when first from the cow; for the thoughtful little girl never omitted having some boiling water put into the tin, which was not poured out till they reached the cow-house, and by this means the milk did not lose its natural heat when milked into the can.

This morning they found the child sitting on her little stool before her mother's door: she was evidently watching for the arrival of her breakfast, as on her knee lay a small piece of *oat-cake*, which is the only *bread* which the lower classes in the north of Scotland ever enjoy. Upon

the approach of the party, Martha rose and made her best curtsy, but was still so weak that she was hardly able to stand. "How do you do this morning, Martha?" said Miss Angerstein, in a soothing voice. "I am better, thank you, Ma'am," said the little girl, while her pale cheeks and heavy eyes seemed to tell of excessive languor and debility. At the sound of the voices, Jane Pierce came out of her small hovel, and asked the party to walk in and rest themselves; which Miss Angerstein declined, but enquired if Martha's health was improving.

"She is wonderfully better than she was some time ago," said Jane; "and, with the nice breakfast Miss M'Ivor brings her, I dare say she will soon be well. When she had nothing but a little porridge for breakfast she was very weak, and did not recover from the fever as we thought she would; but, since Miss has brought her the new milk, she gains strength every day; and the broth that madam gives me for her has done her great good. She cannot walk yet; but she is so glad to be in the air, that I seat her outside the door when the weather is fine."

Elizabeth now produced her usual portion of milk, with the addition of a piece of white wheaten

bread, which she gave to the sick child, who evidently eyed it with great pleasure. "Which do you like best, Martha," said Elizabeth, "the *oat-cake* or the bread?"

"Oh, the bread, Miss!" said the child: "it is nicer than any thing I ever tasted before: it is better even than what Peggy Barron sometimes gives me, though that is very good."

They now took leave of Jane Pierce and her little girl, and proceeded homewards. Upon Miss Angerstein observing, how beautifully clear the water looked in the *burn*, the children asked her whether the little streams in England were not all equally bright and transparent.

"No, my dears," she replied, "the rivers in the *south* of England are by no means like this pretty burn, which is so transparent you might almost count the pebbles that form its gravelly bed; but their course is generally *slow* and quiet, over a bed of soft mud, between level banks and rich meadows. In the *north* of England, they more nearly resemble this stream, for they roll their clear torrents over gravelly bottoms, between elevated banks and rocky precipices; and even when verdant levels occur, the river, or stream, still retains its banks and beds of gravel."

"In this burn," said Jane, "they find such pretty trout: but I cannot think why they sometimes go out at night to catch them. I have seen the light of the torches from our nursery window."

"I understand, Jane, that they are more successful in their fishing by night, than by day; for the fish are attracted by the light, and are then very easily speared."

"Are trout found in your English rivers, Ma'am?"

"Yes, my dear, in many of them; as well as in Wales, in Ireland, and in many other parts of Europe. Did you ever see them as you walked by the burn-side, Jane?"

"Yes: they are a pretty little spotted fish. Are they always of the same size?"

"Not always: their usual size is from eight inches to a foot; but in Lough Neagh, in Ireland, trouts have been caught weighing thirty pounds; and in Ullswater, a lake in Cumberland, and in the Lake of Geneva, they are found of a still larger size. In two or three pools in North Wales, there is found a *variety* of the trout, which is naturally deformed, having a singular crookedness near the tail."

"How very odd! I thought it was human creatures only that were deformed. What do trout live on?"

"Small fish, and aquatic insects; and sometimes they will swallow the shell-fish of fresh-waters, and even take into their stomachs gravel or small stones, to assist in digesting the testaceous part of their food."

"What," said Fanny, "does that hard word mean?"

"I might easily have avoided using it, my love, as its place might have been very properly supplied by the simple word *shell*; that being the meaning of the hard word "*testaceous*," which is derived from the Latin word *testacea*, *animals covered with a shell*. When you are older, I will explain to you more fully the arrangement and classification of animated nature; but it would puzzle your young head, to give you an account of the various divisions it has been found necessary to use."

Elizabeth enquired who had undertaken so laborious a task; as that of classifying the innumerable animals which were known to exist in the world.

“ Though much had been done in some departments of Natural History, before the time of Linnæus, the celebrated Swedish naturalist, yet it is to him that we are indebted for the simplifying of this most interesting study. He reduced all animals into six Classes ; each class is divided into Orders, each order subdivided into Genera, and each genera into Species.”

Jane.—I wish, Ma'am, you would be so kind as to tell us the name of the *six classes*. The number is so small, that we might easily recollect them ; and as Elizabeth and I are very fond of animals, it would be so pleasant to know something about them.

“ The merely knowing the *six classes*, my love, would be of little advantage to you ; as it is the nature, habits, and use of the animal creation, which are so interesting, and lead the mind to reflect, with wonder and awe, upon the power and goodness of that Great Being, who has formed, and so wonderfully preserved the various animated beings with which this beautiful world is peopled. Still, as a beginning to this delightful study, a knowledge of the classes is very proper, and I will, with pleasure, tell you what they are,

and give you every assistance to facilitate the acquirement of your favourite subject.

CLASS the 1st. *Mammalia*.

2nd. *Aves*, or Birds.

3rd. *Amphibia*, or Amphibious Animals.

4th. *Pisces*, or Fishes.

5th. *Insecta*, or Insects.

6th. *Vermes*, or Worms.

“ These you must commit to memory, or you will always be at a loss : when you have done so, we will endeavour to find out the different *orders* of the classes, which will not be very puzzling to you and Elizabeth ; and the young ones can easily amuse themselves while we are talking about what they will feel no interest in.”

“ But my dear, kind Miss Angerstein,” said Emily, “ will you never speak to us ‘ *young ones*,’ while we are out ? May Fanny and I never take hold of your hands, and have such comfortable little bits of *chat* as we have been used to since you came to us ?”

“ I shall always be ready to *chat* with you, my dear Emily, when you and my little Fanny are inclined to walk steadily for a few minutes ; and

will at any time answer your many questions, provided you are sufficiently patient to wait till you see me disengaged. But there is no greater mark of an impatient and ill-bred child, than when a little girl asks the same question several times over, or says repeatedly, "Ma'am, Ma'am," to attract her governess's attention, who may be otherwise engaged at that moment."

Emily coloured deeply and held down her head, for she was conscious of being too often guilty of this rudeness; but upon Miss Angerstein taking her kindly by the hand, the little girl looked up, and said very lowly: "I know what you mean, and I will really try to mind what you say; but it is so tiresome to wait for an answer, because sometimes I forget what I was going to ask you?"

"That is a very sufficient reason, Emily, why you should wait; for if your questions are so trifling, as to be forgotten by yourself before you can repeat the enquiry, surely they are not worth troubling any one with."

"Still I find it very teasing to wait, and I should like much better to speak when the idea comes into my head."

"That is because you are so hasty and im-

patient. But you must learn to conquer yourself in this particular, for nothing like conversation can proceed, if it is to be stopped every moment to answer silly questions ; because, even those which might be very judicious and proper, if put at the right time, become quite the reverse if asked unseasonably. Be assured, that every victory you gain over this restlessness and impatience, will not only be of infinite service to you upon many other occasions, but will also render every succeeding trial less difficult and painful. Besides, how pleasant it will be to hear your grand-mamma say : ‘ Emily is so patient a little girl now, that I am always glad to have her with me.’ At present, you must be aware that your grand-mamma finds you sometimes very troublesome and disagreeable.”

“ Indeed, Ma’am, I will endeavour to conquer myself; for I do love dear grand-mamma very much, and to hear her say so would be such a reward. I will begin next week, I am determined.”

“ And why not this week, my love ? Why not this moment ? The longer you defer it, the more difficult you will find it; and having made so

good a resolution, the best way is to put it in practice at once."

"I will; but do not say any thing to mamma about it, and then she will be so surprised, when she finds that I am not in such haste for an answer as I used to be."

"You may depend upon my secrecy, Emily. But suppose you should forget your resolution, and, when with your papa and mamma give way to your impatience, how shall I remind you of what you have promised to do, without betraying your secret?"

"We must agree upon some sign, which you will make when you say '*Emily*;' and as I shall understand what you mean, I hope I shall curb my temper."

"Well, what shall it be? Suppose I hold up my finger—so, when I say, '*Emily*!'"

"Oh, that will do very well?" And the little girl jumped with delight, thinking the *victory half achieved*, when the plan of proceeding was arranged.

By this time they were arrived at the shrubbery gate, and as it was nearly breakfast-time, they all hastened to be ready against the bell should ring, which it no sooner did, than they all joyfully

placed themselves before a nice basin of milk, and saucer of *porridge*, which is what most children in the Highlands of Scotland breakfast on, as it is thought to be more strengthening than bread. I would advise its being substituted for the nice slices of bread and butter, over which I have seen some children fret, because they were not cut quite to their mind; and then, perhaps, they would learn to be contented with what is set before them; for however nice it may seem to those who are accustomed to it from their cradles, I do not think it would prove very agreeable to an English palate, which had previously been indulged with the greatest of all comforts, *good wheaten bread*.

After breakfast, the young people, with Miss Angerstein, adjourned to the school-room, where they were busily occupied for several hours at their various studies, relieved by an hour's recreation in the middle of the day.

CHAPTER III.

THE following morning, Miss Angerstein and her happy little companions again set forward for Jane Pierce's cottage, and the weather being fine, they proceeded with great delight. Even Jane seemed to enjoy the walk, for it was enlivened by cheerful conversation, and soon fell into the same channel as the preceding day; for, like most little girls who enter upon a fresh study, they were very eager for further information, and would not omit so favourable an opportunity of gratifying their curiosity, and Elizabeth called Miss Angerstein's attention to it, by observing, that if there was nothing more difficult than the *classes* to commit to memory, she thought they would make very speedy progress.

"Perhaps so, my love," answered her governess; "but you are not yet arrived at the end of your difficulties in that way; for, if you recollect, I told you that each class was divided into *orders*,

and before you can understand the plainest *description*, or, at least, *definition* of an animal, these, with many other things, must be deeply imprinted on your memory, that they may be easily applied when occasions offer. What is the first class, Elizabeth?"

"Mammalia. But I do not yet know what animals belong to this class, as you merely gave us the names, and no explanation. I must now beg you to tell us a little more upon the subject, while Fanny and Emily are running about; for they will ~~claim your hand presently.~~"

"You ~~are~~ too young to receive, and I much too ignorant to bestow, any learned explanations; so I will merely tell you, that all the animals included in this class suckle their young, and are *viviparous*. Do you know the meaning of this word, my dears?"

"Oh, yes, ma'am! I was talking to papa one day, and he happened to mention the word *oviparous*, of which, as I did not understand it, I asked the meaning; when papa told me that *oviparous* signified such creatures as were produced from eggs—all sorts of birds; and that the word *viviparous*, as opposed to it, meant such animals as were born alive."

"Exactly so. This class then includes the *human race, quadrupeds, whales, and bats.*"

"The human race! What! can they in any way resemble whales and bats?"

"To bring them into the same class, there is no necessity for any other points of resemblance than those I have just mentioned; and though the human race do not greatly resemble the other animals with which they are classed, yet in this they all perfectly agree, in suckling their young. There are also some characters of their internal structure, which mark them as being in some degree alike; for their hearts have two *ventricles*, or *cavities*; and two *auricles*, which are *muscular caps* that cover the ventricles; and their *lungs* are very similar."

I have often heard that the heart had two *ventricles*, and two *auricles*; but I never before understood what was meant by those hard words."

"That, my dear, must have been entirely your own fault, as almost any dictionary would have given you an explanation of them; besides, your papa and mamma were constantly ready to answer any questions you might put to them at proper seasons."

“ Yes, ma’am; but at those times I always forgot : and, indeed, if the whole truth must be told, I never thought about the meaning of them, but passed them over, as far too difficult for my comprehension.”

“ By which means you remained in ignorance. I am aware that this is a fault peculiar to many young people : it arises from *indolence*, and is the bane of all improvement. A little timely exertion would put them in possession of much general knowledge, at very little expense, either of time or trouble ; yet they are contented in their ignorance, till some unforeseen circumstance rouses them, when, if they are endowed with any reflection, they deeply regret the time they have thus wasted. May you, my dear children, escape this source of self-reproach, by thinking more upon what you read than you have hitherto done, and never be satisfied with saying to yourself : ‘ Oh, this is too difficult for me to understand ;’ but endeavour to make yourselves fully acquainted with whatever subject occupies your attention.”

“ Will you be so good as to tell us how many *orders* there are in the *classes*, that we may add them to our stock of knowledge ?”

“Certainly: but you will find them more difficult to remember than the classes, of which, at present, you know but the names; however, that is enough for our present purpose. The first class, *Mammalia*, contains *seven orders*, which are arranged according to the number, situation, and structure of their teeth. They are named,

1st ORDER. *Primates*: four parallel teeth in each jaw.

2nd ORDER. *Bruta*: no front-teeth in either jaw.

3rd ORDER. *Feræ*: six conical front-teeth in each jaw.

4th ORDER. *Gliræ*: two fore-teeth in each jaw.

5th ORDER, *Pecora*: no fore-teeth in the upper jaw, but six or eight in the lower jaw.

6th ORDER. *Belluæ*: more than two fore-teeth in each jaw, and no horns.

7th ORDER. *Cete*: have no uniform character in the teeth, being very different in the different genera; but they are sufficiently distinguished from the other orders of this class by living in the ocean.

"These you must also commit to memory, and, when well fixed there, we will go on with an explanation of the orders in the other classes, before we say any thing about the genera, species, and varieties in the Class *Mammalia*.

"We are much obliged to you, ma'am," said Elizabeth, "for this list, which will occupy our leisure to-day; but as you have mentioned *genera*, *species*, and *varieties*, will you be so kind as to tell us what you meant by them."

"The animal kingdom, my love, is divided into *classes*; each *class* into *orders*; each *order* into *genera*; each *genus* into *species*; and there are sometimes different varieties in many of the species."

"I know very well what is meant by *class* and *order*; but I do not quite understand what is meant by the term *genus*."

"It is a Latin word, which signifies a *race*, or *kind*. A *genus* is an assemblage of several *species* of animals, which resemble one another in their most essential parts. It has been very properly compared to a family, all the relations of which bear the same *surname*, though every individual is distinguished by a particular *specific* name. In the Class

Mammalia, the *generic* characters are taken from the teeth, as you will see by referring to the list I have given you of the orders ; but the *specific* characters are very various, and are taken from any part or parts of the body which possess a peculiar mark of distinction. Thus, the specific character of the Lion is, that *its body is pale and tawny* ; of the Tiger, that the body of the animal is marked *with long dark streaks*.

“ We now comprehend what you meant by *genera* ; but what are *varieties* ? ”

“ These are occasioned frequently by being exposed to different countries. For in the *species* of the *Persian lynx*, there are *four varieties* found in different countries. I hope this will explain away all your difficulties for the present : you have only to recollect that a *lynx* is an animal of the first class, *Mammalia* ; of the *third order*, *feræ* ; of the *genus*, *felis* ; of the *species*, *Persian lynx*, of which there are *four varieties*.

“ Oh ! this is very clear ; and will be more so when we have made a little further progress in our studies of the subject, for then we shall know all the particulars relating to *feræ* and *felis*, which are almost new terms.”

“ Yes, my little girls ; but if I tell you so much

at once, you will not be able to retain any thing; therefore I shall not say much more to-day upon the subject."

"May we not ask, what animals come under the different orders you have given us the list of?"

"I think we had better defer it till another opportunity; I will then give you a third list, which will contain the number and names of the genera in the *seven orders*, and be most happy to answer any questions which may occur to you, so far as my limited knowledge goes; and what I do not know, we will look for in the various books which your papa's library will afford us, and which will prove of great assistance as *references*, in this your favourite study. As your sisters have joined us, and have been extremely quiet while we have been conversing upon this, to them, most unintelligible subject, we must amuse them by chatting upon some other topic: besides, we are now at Jane Pierce's cottage, where we must not stop, for we have rather loitered in our walk, and I fear we shall scarcely be home to breakfast."

"The milk was given to the little girl, who most gratefully thanked them for it, and without

much delay they set out on their return homewards.

"We came," said Emily, "in hopes of hearing some pretty stories about animals, for we are very fond of them; but what you and my sisters talk about is not at all amusing, being nothing but hard words. Do pray tell Fanny and me a pretty story."

"You have been so good while we were talking, that I will with pleasure oblige you, Emily; because I know full well it must have been a great exertion to hold your tongue so long, and, as a reward for the effort, I will tell you the only one I can recollect at the moment. Did you ever see a *monkey*, my dears?"

"We did once. Mamma took us to call upon a lady who had a tame one; and though we were at first much frightened at it, we were afterwards very much amused. It did such a number of curious tricks, and was so mischievous, that the lady said she must soon part from it, for it hid every thing, and made a great deal of confusion in the house. Fanny and I stood at a little distance from it, and it imitated all our actions: if we opened our mouths, it did the same; and

when we found this out, we did a variety of things, all of which it mimicked, to our great delight."

"It is this imitative power of these animals, about which I am going to tell you an anecdote, which I met with somewhere. You have all, even little Fanny, heard of Alexander the Great."

"Oh, yes," said Fanny, "he was king of Macedon, and was so fond of war that he tried to conquer all the world; but he killed himself through drinking too much wine, out of a large cup that held a great many bottles of wine. I read this in Mrs. Trimmer's book."

"Yes: but by some authors his death is attributed to poison. After he had conquered Darius, king of Persia, he continued to wage war with all the Asiatic nations, conquering them all by turns. As he could never tell at what moment his army might be engaged, the country being quite unknown to him and his officers, the soldiers always marched in order of battle. They happened one night to encamp on a mountain that was inhabited by a numerous tribe of monkeys. On the following morning, they saw at a distance what appeared to be *an immense body of troops*

approaching them, as if with the intention of coming to an engagement. The commanders, as well as the soldiers, were in the utmost astonishment: having entirely subdued the prince of the country, they were not able to conceive from whence this new force could have come, as they had not previously been informed of any thing of the kind. The alarm was immediately given, and in a short time the whole Macedonian army was drawn up in battle array, to combat with this unexpected foe. The prince of the country, who was a prisoner in the camp, was questioned respecting it. He was surprised to be informed of such a force in the neighbourhood, and requested permission to behold it himself: he immediately perceived of what this so much dreaded army was composed, and could not forbear smiling at the error; for this *immense body of troops* proved to be *monkeys*, which, in imitation of the soldiers, had arranged themselves in something like *military order*. But the Macedonians were not a little vexed, that they should have mistaken a troop of these imitative animals for a band of *armed men*."

"How surprised all the soldiers must have been," said Jane; "for, I suppose, at that early

period monkeys were not common in Europe, as they now are. But what sort of monkeys could they have been, to be thought *men*; for I can see not the least resemblance between a monkey and a man."

Fanny. Oh, but I can; for the one we saw at Mrs. Mackenzie's was very like *an old man* in the face. I even fancied, that, had it been a little larger, I could have taken it for old Rory Roy, and I told mamma so."

"I do not know, Jane, of what species the monkeys were which were seen by the Macedonian army; but most probably they were *apes* instead of *monkeys*, as most of them walk upright, have no tails, and imitate human actions more readily than monkeys; but they do not live in such large troops. It has, however, been asserted by some naturalists, that monkeys keep up a great degree of subordination in their large communities; that they always travel in good order, conducted by *chiefs*, the strongest and most experienced animals of the whole troop; and that, on these occasions, some of the largest monkeys are placed in the rear, the sound of whose voice immediately silences that of any of the others that may be too noisy. If this be really so, their

being mistaken for an army by the Macedonians, who had probably never seen an animal of the kind before, is easily accounted for. Even now, I have heard, the negroes believe them to be a vagabond race of men, who are too indolent to construct habitations, or to cultivate the ground ; and the dreadful havoc which monkeys sometimes commit in the fields and gardens of persons who dwell in the countries where they abound, greatly confirms them in this idea."

" I wonder," said Fanny, " why they do not try to get rid of such mischievous and tiresome animals, by destroying them, as the English did the wolves. I am sure it would be the wisest plan."

" So far from that being the case, my love, the natives of many parts of India worship apes and monkeys ; and temples of the greatest magnificence are erected in honour of them. In some places their numbers are so great, that they frequently come in troops into the cities, and enter the houses with perfect freedom. In Amadabad, the capital of Guzerat, there are three hospitals for animals, where lame and sick monkeys are fed and cherished. *Twice* every week the monkeys of the neighbourhood assemble of

their own accord, in the streets of that city, and, as the houses have flat roofs, they climb up, and lie there during the great heats. The inhabitants are always careful to deposit on these roofs, rice, millet, or fruit; for, whenever, by any accident, they are prevented from doing so, the disappointed animals become furious, break the tiles, and do various feats of mischief."

"It is very suprising why they should tolerate such creatures," said Jane; "and it seems to me so perfectly ridiculous to have *hospitals* for animals."

"We must make great allowances, my love, for the difference of religious opinions, which is doubtless the cause of these institutions in India. If you recollect what I have told you about the Brahmins, I think you will be at no loss to discover why they are not only tolerated, but taken such care of."

"Are the *Gentoos* the same people as the *Brahmins*? Because I recollect your telling us, that their religion did not allow of their taking the life of any animal, even for their own support."

"The *Bramins*, *Brakhmins*, or *Brachmans*, for they are frequently called by these three differ-

ently-spelt names, are Indian priests or philosophers; and the *Gentoos* are a people who inhabit the country of Hindostan, and profess the religion of the Brahmins ; therefore, though the *Brahmins* are *Gentoos*, all *Gentoos* are not *Brahmins*. Do you now understand the difference, Jane?"

"Yes: but why will they not eat animal food?"

Miss Angerstein. Because they believe in the doctrine of *metempsychosis*, or transmigration of the soul of man, after death, into the body of some other animal. The term *metempsychosis*, I have been told, is derived from two Greek words that signify '*I animate, or enliven*;' and so bigoted are these poor people to this doctrine, that they not only forbear eating any thing that has had life, but many of them even refuse to defend themselves against wild beasts. It is said, that they burn no wood, lest some little animal-cule should be in it; and always redeem from the hands of strangers, any animals that they find ready to be killed?"

Elizabeth. Then they are afraid of disturbing the soul that has taken up its abode in the body of some lower animal of the creation?"

Miss Angerstein. Exactly so, my dear. Have

you never read, in that most instructive and entertaining little work, "Evenings at Home," the tale entitled the '*Transmigrations of Indur*,' which gives an account of the passage of a young prince's soul, from the body of one animal to another?

Elizabeth. I do not recollect it at this moment.

Miss Angerstein. Then I recommend you to read it at your first leisure: it will give you a very clear idea of this distinguishing article of the Gentoo religion. I think you must now fully comprehend why so much attention is paid to animals in those countries.

Jane. Yes: I see, that when they erect hospitals for the various sorts of animals, they fancy they are providing for the comfort of such as are perhaps possessed by the souls of many whom they either loved or honoured while in a human form.

Miss Angerstein. Consequently, though we may pity their errors, and wish they may soon become acquainted with our more pure and rational religion, yet we cannot be surprised at their acting as they do, nor blame them for their excessive care. Have you understood what

your sisters and I have been talking about, Emily and Fanny ?

“ Yes, ma'am, very well ; because you always explain any words with which we are not much acquainted. Had you not told us the meaning of *metempsychosis*, I should have been sadly puzzled : it is such a long, hard word.”

“ Had I been conversing with you two little girls alone, I should not have made use of it, for fear of puzzling you ; but Elizabeth is old enough to have such terms familiarized to her now, and therefore I mentioned it ; but if at any time you do not rightly comprehend what I say, treasure it up till I have done speaking, and then tell me what is your difficulty. I am never so happy as when I am engaged in smoothing your path in the acquirement of knowledge ; and, as you all seem affectionate, and grateful for my endeavours, I am more than repaid for my trouble. But we are now arrived at home, and as there are only a few minutes before breakfast, you must be very quick in making yourselves neat ; for I do not like to see you at the breakfast-table, as you were the other day, Jane, your hair uncombed, and your shoes untied. Make haste : there is the bell ringing.

CHAPTER IV.

For several days the weather was so unfavourable, that Miss Angerstein and her pupils were confined to the house; and Elizabeth was obliged to delegate Roderick to convey the milk to little Martha, who was daily gaining strength, from the wholesome food which Mrs. M'Ivor regularly supplied her with.

Sunday was the first fine morning they had had for nearly a week, and the little girls all gladly prepared for their walk. They had been most agreeably disappointed in Miss Angerstein; for, instead of the morose and severe person they had been led to expect, she was gentle and good-natured, though firm, in requiring obedience to her wishes; and always ready to contribute to their little pleasures, when the duties of the day were over. In short, instead of being miserable with their *new governess*, as they had anticipated,

they found themselves much happier than before. Jane, certainly, no longer had her own way upon every occasion ; but knowing that she could not have it, from having tried her strength with Miss Angerstein, very soon after that lady's arrival at Inch Cairn, and not being destitute of good sense, she made a merit of necessity, and submitted pretty cheerfully to her affectionate and judicious instructress. Since the morning that the proper meaning of *charity* had been explained to her, she had never objected to the walk by the burn-side, but had even assisted Elizabeth in carrying the milk ; and the little object of their care and attention had derived so much benefit from it, that she was nearly strong enough now to fetch it for herself. Elizabeth greatly rejoiced at the evident improvement in her sister's temper, for she was most affectionately attached to her. They were so nearly of the same age, had played together from their earliest infancy, and their studies were entirely the same ; yet the violence of Jane's temper had embittered every thing for some time before Miss Angerstein's arrival, owing to its not receiving those salutary checks, which had previously been administered by her watchful mother, who had devoted herself entirely to her children,

till another and equally important claim upon her attention appeared, in the helpless state to which her only surviving parent was reduced. Then Jane gained the entire ascendant: her wishes became a law; and, to prevent constant discord, Elizabeth yielded to her will: but all their former happiness was gone. Mrs. M'Ivor's prudent choice of an instructress, now promised more real comfort than they had known for many months; and all the children rejoiced in the society of one, whom they had been taught by their parents, not only to respect, but to love; and whose constant aim it was, to convince them that she was influenced in her every action, by an earnest desire for their improvement and happiness.

The morning was most lovely, and after they had visited the cow-house, had drank their glass of milk, and put Martha's into the tin, they all set off in great delight for the burn-side cottage. The grass glittered with the rain-drops, which were rendered doubly brilliant by the sun's rays; every thing looked cheerful, yet was there that indescribable stillness which pervades a sabbath morning in the Highlands of Scotland, where not the slightest stroke of unnecessary work is ever done on that sacred day. The children remarked,

how calm and quiet every thing was: so different to their last morning's walk, when they had been amused with watching and listening to the mowers; that even the cow-herds were quite silent, and instead of the lively whistle, or the equally merry song, they were busied in reading, while their flocks were feeding, and seemed to acknowledge, by their quiet, decent behaviour, that such light amusements were unfitted to the day.

“That is the consequence of early impression and example, my dears. From their infancy they have been taught that Sunday is a day most particularly devoted to the service of religion; and few are the instances in this part of Scotland, and in their rank of life, of a sabbath being passed otherwise than the commandment orders: ‘*Remember that thou keep holy the sabbath day.*’ Since my residence in the Highlands, I have been delighted to observe the way in which it is kept by all ranks of people, but more particularly by the labouring classes; and in this, as well as in many other things, it would be well if my own dear countrymen would follow their example.”

“Do not the English pay as much respect to the day as the Scotch?” asked Elizabeth.

“I fear not so generally, my love, as in the

Highlands, where a certain degree of primitive simplicity still remains. But in the *towns* in the south of Scotland, I fancy we might meet with many thousands who are equally relaxed in their religious ideas, as even their neighbours the English. But you must not suppose that Sunday is unobserved there, any more than here : I merely meant, that too many among the lower classes considered it as a day of worldly enjoyment, rather than as one more especially set apart for religious instruction and improvement; and the sight of yonder boy, who is so attentively studying his Bible, made me regret that many of his age in England, and in the Lowlands of Scotland, should be so very differently employed."

Fanny. I love Sunday so much, that I often thank God, in my prayers, for having given us such a happy day*.

" You are quite right, my love, in calling it a happy day, for it certainly is so: but I should like to

* This observation was made by a Scotch child of six years old, to the Authoress; but it was by a lively little boy. She has, however, taken the liberty of putting it into a little girl's mouth.

know *why* you think it more happy than the other days of the week."

Fanny. I can hardly tell you, for I have so many pleasures. But, you know, papa is more with us on that day, and even we little girls dine with you; and then we are all so comfortable together."

"Very true, Fanny. And are those your only reasons for loving Sunday."

Fanny. No, ma'am: I am very fond of going to church, and of my Sunday lessons: they are easier and prettier than my spelling and grammar. The story of little Joseph, and his coat of many colours, which I learnt last Sunday, how beautiful it is!"

"It is: but do you know why Sunday is observed by Christians?"

Fanny. I know that God ordered the Jews to keep the seventh day holy; but that is Saturday. Why do we keep Sunday?"

"The Jews were recommended to keep the seventh day, or Saturday; because, when God had created the world, and all things in it, He rested on that day. Christians keep the first day of the week, or Sunday; because, after our Lord and Saviour had been crucified, and buried on the

Friday, he arose from the dead on the first day."

Jane. Is there any command in the New Testament for this alteration?

"No, my dear: but we know, that even during our Lord's ministry upon earth, it was the custom of the earliest Christians to meet together on the first day of the week, for the purpose of holding religious assemblies; and whatever nation embraced the sublime religion of the New Testament, adhered to this practice; and, in commemoration of his rising from the grave, begin the week by praising God. The Mahometans perform their religious worship on *Friday*, because the *Hegira* occurred on that day."

Emily. Will you explain that word to me, ma'am? I never heard it before, and I should like to know what it means."

"It is an Arabic word, Emily, which signifies *to fly, quit one's country, family, friends.*"

"I know the Mahometans are followers of a man who pretended to be a prophet; but why do they pay such respect to the *Hegira*? What is the *Hegira*?"

"I will tell you, my dear. The impostor Mahomet was a native of Mecca, a city of Arabia,

and, till his twenty-eighth year, was employed by his uncle to go with his caravans from Mecca to Damascus. At that time he became one of the wealthiest men in Mecca, through marrying a very rich widow, and formed the design of distinguishing himself as the founder of a new religious sect. He pretended to great sanctity, and spent much time in a cave near Mecca, where, with the assistance of a Persian Jew and two Christians, he is said to have framed the *Koran*, which word is of the same meaning as *the Bible*, that is, by way of eminence, *the Book*; and which he pretended to have received, at different times, from the angel Gabriel. He told so many marvellous tales to his followers, that the magistrates of the city, fearing his impostures would raise a sedition, resolved to expel him; when he fled from Mecca to Medina, where he was very kindly received. This flight is called *the Hegira*. It happened in the month of July, A. D. 622. Can my little Fanny now tell me what is meant by the *Hegira*?"

"Oh! yes, ma'am; the *Hegira* is the flight of the impostor Mahomet from his native city, Mecca, to Medina."

"Very well, my dear little girl. He was also

buried at Medina ; from which circumstance, as well as from its having afforded him shelter when driven from Mecca, the Mahometans dignify it with the title of ' the City of the Prophet.' "

Elizabeth. What is the reason that, in every representation of a Turkish mosque, or even a picture of a Turk, a *crescent* is always to be seen ?

Miss Angerstein. Because the Turks reckon every event from the *Hegira*, as we Christians do from the birth of Christ, and the Jews from the creation of the world. The *Hegira* then being to the Mahometans of such high importance, and this event having happened about the *new moon*, as much regard is paid by them to a *crescent*, or representation of a *new moon*, as the *cross* has obtained among Christians ; for which reason, all their *mosques*, or *temples*, are adorned with *crescents*.

Elizabeth. What a variety of religious sects there seem to be in the world now. Do you think there were as many under the Jewish dispensation ?

" There does not appear to have been any difference of religious opinions among the Jews, till after the cessation of prophecy : most of them

arose subsequent to the return from the Babylonian captivity ; but there are several sects mentioned in the New Testament."

"Yes, such as the *Scribes* and *Pharisees*, the Sadducees, the Nazarites, the Publicans, the Galileans."

Miss Angerstein. The *Scribes* are not usually considered a religious sect : they were *writers of the law*, and often perverted the meaning of the text, instead of explaining it. "*Scribes*," "*doctors of the law*," and "*lawyers*," were only different names for the same class of men. The *Publicans* also were not of any sect, civil or religious, but merely *tax-gatherers*, or *collectors of customs* due to the Romans; and as they were generally Jews, this employment rendered them extremely disagreeable to their brethren.

Elizabeth. The Pharisees and Sadducees are often spoken of: was I also wrong in classing them among the religious sects ?

"I believe not, my love. The sect of the Pharisees paid more attention to outward ceremonies than to the duties of moral virtue; and being entirely destitute of humility towards God, and "trusting in themselves that they were righteous," they utterly despised the rest of mankind.

They, however, believed in the *immortality of the soul*, the *resurrection of the dead*, and in a future state of rewards and punishments, all of which the *Sadducees* denied; who, therefore, confining all their hopes and fears to this present life, devoted themselves wholly to its pleasures, and merely punished such crimes as disturbed the public tranquillity."

Jane. Elizabeth also mentioned the *Nazarites*, the *Galileans*, and the *Herodians*.

Elizabeth. No, Jane, not the Herodians; because I know that they were merely the partizans, or followers, of Herod the Great.

Jane. Well then, the *Nazarites* and *Galileans*. I should like to know who they were.

Miss Angerstein. The *Galileans* were a very turbulent and seditious sect, who, by degrees, drew to themselves many of the other sects. They derived their name from their leader, *Judas of Galilee*. The *Nazarites*, of whom we read in the Old and New Testaments, were persons devoted to God, either by their parents or themselves; sometimes for their whole life, sometimes only for a limited time. The three principal *Nazarites* that we read of, were *Sampson*, *Samuel*, and *John the Baptist*.

Fanny. When reading a chapter in the Acts yesterday, I found *Jews* and *proselytes* mentioned together. Who the Jews were, I know; but who were meant by proselytes?

Miss Angerstein. A *proselyte* is a *convert*, one brought over to a new opinion; therefore, the *proselytes* you read of were persons who, having been born *Gentiles*, were converted or brought over to the *Jewish religion*, and who retained that name till, by a steady adherence to their new religion, they had proved themselves worthy to be admitted into the congregation of God's people, as adopted children. But our questions and answers must cease for awhile. Here we are at the cottage.

Elizabeth. I have several other things to ask, but must wait till we have paid our visit here. Look at little Martha: she is quite jumping with delight at seeing us.

Miss Angerstein. I suppose, Martha, you are very glad to see a fine morning, as it brings your young friends to visit you. I need not ask you if you are *better*; you really look quite well.

Martha. It has seemed a weary time since you were here, ma'am; but Roderick told me, you and the young ladies were well. I wanted to come

down the burn to see you, but mother would not let me.

Miss Angerstein. Certainly not, my dear. The weather has been so wet, that it was not fit for you to walk so far ; but if you are strong enough to come with your mother to Inch Cairn, to-day, Mrs. M'Ivor desired me to say you could have your dinner and tea, and walk quietly back in the cool of the evening.

Jane Pierce very gladly accepted the invitation, telling Miss Angerstein that, if it would not be thought intruding too long, she would take Martha down early, and then she could go to kirk (church) herself, both morning and afternoon ; for, since Martha's illness, she had not been able to get there so often as she ought.

Miss Angerstein told her, that the sooner she was at Inch Cairn the better, as the sun was almost too hot in the middle of the day for Martha to walk so far ; and that she could stay either with nurse or the young ladies during the Gælic service, if her mother would return to take charge of her during the English sermon. This was, of course, agreed to, and the happy party began their walk homewards.

Elizabeth. May I now ask the remaining questions, ma'am, for fear I should not have another opportunity to-day?

Miss Angerstein. Yes, my love.

Elizabeth. I was one day at work in the drawing room, when Mr. Macpherson, the clergyman, called on papa. He sat talking for a very long time, but I could not understand very well what it was about; for he mentioned the *Septuagint*, the *Vulgate*, the *Sanhedrim*, and many other equally hard words, with the meaning of none of which was I acquainted. Will you be so good as to tell me something about them?

Miss Angerstein. I will explain them as well as I can, my dear; but you did wrong in not asking your papa what they meant, as soon as Mr. Macpherson was gone. He would have known much better than I; and you would have obtained an increase of information, which, but for the turn our conversation has taken this morning, you might have been ignorant of for some time longer. I once before pointed out to you the impropriety of this spirit of procrastination, which, if not corrected, will be productive of much evil; for, as you well know, Elizabeth, it has often put you to considerable inconvenience in trifling mat-

ters. For instance, the other day you very nearly lost your drive with your papa and mamma, through having delayed mending your gloves, though you had had several opportunities the day before. This was a trifling circumstance, certainly; but it showed the ill effects of the bad habit you have acquired, of putting every thing off till the last moment. You must try and correct it, my love, or it will attend you through life, and mar all your best intentions.

Elizabeth. I really do, and will still continue to strive against it. I was so interested in Mrs. Hoffman's "Alfred Campbell," that I quite forgot my gloves.

Miss Angerstein. But, Elizabeth, I told you of them in the morning.

Elizabeth. I thought, as I had the whole day before me, I might indulge myself in reading then, which I did till I was obliged to apply to my lessons; and having left off just as I was going to read the account of the *Memnonium*, with the statue it contained, whose *little toe* was three feet in length, I was so eager to hear more of such wonders, that, as soon as my studies were over, I flew to my book, and, I am ashamed to say, never once thought of my gloves.

Miss Angerstein. This exactly proves what I have so often told you, my dear, that to procure time for your duties and your pleasures, you must never allow the latter to usurp the place of the former. For the future, let me beg of you to attend to your necessary business first, and then your enjoyments will be greatly heightened by the consciousness that you have neglected nothing that ought to have been done.

Elizabeth. I will endeavour to remember all this ; for, I assure you, I felt very uncomfortable when I did recollect that I had not obeyed you. You are so kind and considerate, and so indulgent to us all, that I ought not to neglect any thing you desire me to do. Pray excuse me this once, and I think you will see an amendment.

Miss Angerstein. Most willingly, my love ; for my only wish is to convince you of your fault ; and as you now seem so sensible of it, we will drop the subject, and I will give you the explanations you desired. Shall we begin with *the Sanhedrim* ?

Elizabeth. If you please.

Miss Angerstein. The word *Sanhedrim*, as I once read in *Doddridge's Family Expositor*, is a corrupted word from the Greek, which signifies

an assembly. Among the Jews it meant a council of *seventy*, or, as some say, *seventy-three* senators, besides the president, who, after the time of Moses, (by whom this great national council is said to have been established,) was usually the high priest, and who assembled in a hall in the Temple of Jerusalem, and there determined the most important affairs of the nation. But we are now at home, and I am tired; for we have walked a great distance, and it is very warm.

Jane. May we not sit down on this seat, and have the other explanations you promised us?

Elizabeth. Pray, Jane, do not ask for them now. Did you not hear Miss Angerstein say she was tired. Consider how much she has talked to us this morning. We had better put them off till another opportunity.

Miss Angerstein. Thank you, my dear Elizabeth, for your consideration; but it was bodily fatigue I complained of, and by complying with Jane's request, of sitting on this my favourite seat, I shall be resting myself and obliging her; particularly as it wants some time to breakfast, and I have very little more to say. *The Septuagint* and *the Vulgate* were, I think, the other

words you mentioned. Now let us sit down ; but do not untie your bonnets, as you are warm, for you may take cold if you do.

Jane. I was very thoughtless in making this request ; but I assure you, ma'am, I should not, if there had not been a seat for you : because I really love you, and I should be so sorry to add to your fatigue.

Miss Angerstein. I am sure you would, my little girl ; but, for the future, always think whether a compliance with your wishes may be agreeable or not, to the person you are with ; and whether, in her place, you would like the request to be made. This will prevent *selfishness*. But we must not waste our time. *The Septuagint* is a Greek translation of the Old Testament, made at Alexandria in Egypt, in the reign of *Ptolemy Philadelphus*, and so called, because translated by the labours of *seventy* different persons. It is often signified in books by "The LXX," which, by and by, you may, perhaps, meet with in your reading. All I can tell you of *the Vulgate*, is, that it is a very ancient version of the Bible in Latin ; but by whom, or when done, I do not recollect, if I ever knew.

Elizabeth. I am very much obliged to you,

my dear, kind friend. I hope I shall recollect all you have told us; and if I do, how much information I shall gain in the course of a year, from our pleasant morning walks.

Miss Angerstein. Much will necessarily escape from your young head, unless you make a little memorandum of the subjects of our conversation, my love; and this you might easily do. It would prove a very good exercise for you, as well as serve to recal things to your memory, when they have partly made their escape. But we must now prepare for breakfast.

CHAP. V.

MRS. M'IVOR and Miss Angerstein not considering little Martha by any means strong enough to fetch her own breakfast yet, it was resolved the walks to the burn-side cottage (as the children had named Jane Pierce's humble dwelling) should be continued for some time longer ; as the milk was thought particularly good for little Martha, and the walk was now equally agreeable to all parties. Indeed, it was so exactly suited for a *morning walk* during the sultry summer months, being sheltered, by a high bank with a plantation of the silver birch, from the sunbeams, and having a beautiful, clear mountain-stream rippling by on the other, that, had it not been for the milk, it is doubtful whether any other could have been found so desirable in every respect. As the stream wound, for many miles, round Mr. M'Ivor's estate, he had had a firm gravel-walk made through his fields, by the burn-side, on purpose for the accommodation of his family ;

but being a man who loved to view nature in its simplest forms, he had made no alteration beyond what was actually necessary. At the bottom of the shrubbery ran the burn, over which he threw a plain wooden bridge, which connected this delightful spot with his own grounds, and which was the favourite resort of himself and his friends. The view in the distance was bounded by high mountains on three sides; but upon reaching a little eminence, the Beaulieu Firth was a beautiful object, and added greatly to the interest of the scene. This, therefore, was the constant *morning* promenade of Miss Angerstein and her happy pupils; but of an evening they made little excursions in various directions. The high road from Inverness winds mostly by the shores of the Firth, with the hills; or rather mountains, of Ross-shire, in the distance on the opposite shore; and the old family seat of Redcastle is seen among the trees and rising ground. This was also a favourite walk; because, while their brother had been studying at Inverness academy, they had frequently gone to meet him on a Saturday, and enjoy the pleasure of his company an hour sooner than they could otherwise. Now that he was removed to Eton, they still liked the walk for his

sake, and would frequently relate to Miss Angerstein the many acts of brotherly kindness they had experienced from their "dear Alexander," during these short but most agreeable visits to his much-loved home, and long for the time when they should once more see him. For though he had only left them after Easter, and the month of June was scarcely over its prime, yet they began to reckon upon the holidays, which at Eton commence the latter end of July, or beginning of August; and laid plans for the amusement of all parties, in which Miss Angerstein very kindly assisted with her advice and opinion. Another of their evening excursions, was to the beautiful woods of Moniac: but to reach them, and be able to enjoy the pleasure of walking in them afterwards, required the assistance of William and the donkeys; therefore, this was reserved as a reward for good conduct. And greatly did they value the indulgence; for, in addition to the delight which young people always take in a fine prospect, and the great variety of hill and dale which characterizes this beautiful spot, and about which they wandered with inexpressible pleasure, there was a great abundance of the small *wood strawberry*, in the proper season, and of the

sweet-scented woodruffe, the smell of which greatly resembles that of a *Tonquin-bean*, and retains it, when properly dried, for several years. One of the party was always furnished with a small basket, to bring home some of this plant for dear grand-mamma, who was particularly fond of it ; and happy was the little girl who was selected as the bearer of so agreeable a burden ! Miss Angerstein was also fond of this walk, for, at the entrance of the woods, the proprietor of the estate had built some cottages in the *English style*, which brought a feeling of home and her native country to her mind ; which, happy as she was in Mrs. M'Ivor's family, could not but be most pleasing to her ; and she frequently looked at them till a tear was ready to start into her eye. But when she considered the happy little group about her, and the pleasing alteration that was gradually taking place in their characters, she checked the rising tear, and felt thankful she had met with children who were sensible of her affectionate care for them, and, by their grateful and respectful behaviour, promised to reward her for all her anxiety, and lighten the arduous task she had undertaken. These cottages were of stone, properly cemented with mortar, neatly slated,

with casement windows, chimneys, and the insides well plastered and white-washed ; far superior to any other habitations of the kind in the Highlands : for the houses of the peasants there are miserable huts, mostly formed of loose stones laid one upon the other, without any other floor than the bare ground. . The roof is made with rafters, covered with heath instead of thatch ; and, in the centre, a hole is left for the smoke to escape, the luxury of a chimney being little thought of. Some of the better sort have windows, but so small as scarcely to admit sufficient light to work or read by. Sometimes these hovels have several apartments, one of which is usually appropriated to the use of the cow or the horse, should the inhabitant possess either. The chickens commonly occupy the same room as the family, and even the goats are sometimes admitted into equal familiarity ; and close by the door of the house stands the *midden*, or heap of manure, or else a pile of peat for their fires. Unlike their neighbours, the English, a *flower-garden* is never thought of : a piece of untidy-looking ground, called a *kale-yard*, which supplies the family with the sort of vegetable so called and a few potatoes, is the only sign of a *garden* ; though, in

many respects, the condition of the *Highland* peasantry is greatly inferior to the English, yet in many points they are far happier. Being strong and healthy, and unused to any of the conveniencies of life, they do not find the want of them ; and it is a most pleasing object to see the master of one of these hovels seated before the door, of a fine summer evening, all his family ranged about him, reading to them a *chapter from the Bible*, before the children go to bed. On a Sunday evening, when walking in the vale beneath, it is equally pleasing to hear the voices of the humble inhabitants of the small village, seated on the brow of the hill which overhangs the path, uniting in praise to their great Creator ; sometimes swelling on the breeze, in full, deep tones, and then dying away so faintly as scarcely to be heard. Miss Angerstein and her pupils had often loitered till after sunset, listening to these simple effusions of gratitude and piety, from the small village of *Drummareach*, with which its inhabitants closed the Sabbath, all of whom were cotters of the most humble description. And while they could so employ themselves, were they to be considered as objects of pity ? No ; most decidedly, they are far happier than thou-

sands whose lot is cast in a more genial clime, and who, without being half so well instructed in their duties to their Almighty Maker and their neighbour, possess a greater share of the comforts of life. But to return to our young friends.

A fine morning found them on the road to Jane Pierce's cottage ; and after some little chit-chat upon other topics, Elizabeth and Jane repeated to their kind instructress the names of the *seven* Orders of the Class Mammalia, according to the Linnæan system, and begged she would fulfil her promise of giving the Orders of the second class, *Aves*, or Birds.

“ I will, with pleasure, my dear children. Owing to the weather and other circumstances, we have not had any conversation upon your favourite study for some time ; but we must now make amends for lost time, or we shall let the summer pass without completing our sketch of Zoology. I have made out the lists for you to commit to memory ; but we must say a few words about this second class, because, as you well know, they differ most essentially from the first, which is composed of *the human race, quadrupeds, whales, and bats*, all of which are *viviparous* ; but the second class, *Aves*, or Birds,

are all *oviparous*, are generally covered with feathers, and have *wings* instead of *hands* or *fore-legs*. The structure of birds is also particularly curious, and a proof of the infinite skill and wisdom of our great Creator. The substance of their bones is much thinner than that of *land animals*, that they may be lighter, and better able to mount in the air; and that the thinness of the bones should not render them weaker, the substance of them is stronger and harder. Their bodies are covered with *feathers*, which are much lighter than the same quantity of *hair* would be. They are placed over each other, close to the body, like the tiles of a house; and, to give warmth to the body, a short and soft down fills up all the vacant spaces between the shafts of the feathers, which are so arranged from the head backwards, as not to impede their progress when cutting their way through the air."

Jane. I have always been surprised that the feathers of birds do not seem to get wet through when exposed to the rain, as I should suppose they would. Can you tell me why they resist wet?

Miss Angerstein. I believe I can, my love. Each bird is furnished with two glands, at the

lower part of the back, in which a quantity of unctuous matter is constantly secreting. This they occasionally press out by means of their bill, and with it they dress their feathers. You must have observed birds, of all kinds, frequently passing the feathers through their bills.

Jane. Yes, I have ; but I did not know that birds used oil at their toilets : I merely thought it was with the intention of smoothing and cleaning them.

Miss Angerstein. So it is ; but at the same time they are defending themselves from the wet. Without this, or some other equally effectual expedient, the feathers of birds would perpetually imbibe the moisture of the atmosphere ; and, during rain, would absorb so much wet, as almost, if not wholly, to impede their flight. The birds which share, as it were, the habitations of man, and live principally under cover, do not require so great a supply of this fluid, and therefore are not provided with so large a stock as those that rove abroad and reside in the open air.

Elizabeth. This accounts then, most satisfactorily, for the ruffled and uncomfortable appearance which the poultry have, during wet weather ; for nothing can look more miserable

than a hen and chickens when overtaken by an unexpected shower at some distance from any shelter. I have often observed and pitied them.

Miss Angerstein. Most certainly it does, Elizabeth. All aquatic birds, for instance, have a large proportion; because water being their element, their feathers would always be wet, without a certain quantity of oil to resist it. Now then we will proceed to the orders of this class, which are *six*, and which are founded principally on their habits of life, and the particular resemblance of their external parts, especially of their *bills*. They may also be separated into two grand divisions, *land-birds* and *water-birds*.

The six Orders are :

- 1st. *Accipitres*, or *rapacious birds*, that have *hooked bills*, and on each side of the upper mandible there is an angular projection; as, eagles, vultures, &c.
- 2nd. *Picæ*, or the *pie kind*, whose bills are sharp at the edge, compressed at the sides, and convex on the upper surface; as, crows, parrots, humming birds, &c.

3rd. *Gallinæ*, or the *poultry kind*. The bills of these birds have the upper mandible considerably arched; as, pheasants, turkeys, ostriches, peacocks, &c.

4th. *Passeres*, or *sparrow kind*, which have conical sharp-pointed bills; as, pigeons, larks, linnets, &c.

5th. *Grallæ*, or the *crane kind*, sometimes called *waders*. These have a cylindrical bill, and a fleshy tongue; and the legs of most of the species are long; as, herons, plovers, snipes, woodcocks, &c.

6th. *Anseres*, or the *goose kind*, called also *swimmers*. The bills in this order are broad at the top, smooth, and covered with a thin, membranaceous skin; as, geese, ducks, swans, penguins, pelicans, &c.

Jané. What do you mean by the upper mandible? I never heard the word before.

Miss Angerstein. It signifies a *jaw*, in the common acceptation of the word; but with birds

it more properly means the two parts of which the *bill* is composed, and which are sometimes spoken of as the *superior* or *upper mandible*, and the *inferior* or *lower mandible*.

Elizabeth. How is it possible that birds can breathe while moving so swiftly as I have sometimes seen them? When I run for any distance, I am so out of breath, I know not what to do; yet they seem to go on so pleasantly without feeling the same inconvenience, or they would not, like the lark, be able to sing while fluttering aloft in the air.

Miss Angerstein. The goodness of God has provided birds with air-vessels, which are extended through the whole body, and adhere to the under surface of the bones, by means of which they *respire*, or *breathe*. These, by their motion, force the air through the *true lungs*, which are never expanded by air, but are destined solely for the purpose of cooling and refreshing the blood; and owing to this general diffusion of air through the bodies of birds, their respiration is never stopped, or even interrupted, by the rapidity of their motion. Were it possible for you, my Elizabeth, to move with swiftness equal to that of a swallow, the resistance of the

air would soon suffocate you, as you are not provided with reservoirs similar to those of birds.

Elizabeth. How wonderfully curious it is ! and how delightful to know all this ! I had no idea we should have found so very much to interest us, when we first proposed to learn some particulars of natural history.

Miss Angerstein. There is no study more delightful, in itself, my dear, nor more likely to make us sensible of the wisdom, power, and goodness of that great God, by whom all things were created. For who can think of the wonderful formation of the little songsters of our woods, without being filled with admiration and gratitude ?

Jane. One day, Roderick brought an owl for us to look at, which he had caught in the barn ; and we all thought it a droll bird, for instead of looking about it, as any other would have done, it drew a sort of lid over its eyes, and would not raise it, though we made as much noise as we could to wake it.

Miss Angerstein. It was not asleep, my dear ; but the nature of its eyes is such, that it cannot bear the glare of day. Owls see best at night, or in the dusk of evening, and rarely venture out in

sunshine. I believe, all birds are provided with a sort of transparent covering, which can at pleasure be drawn over the whole eye, like a curtain. As they are continually passing through hedges and thickets, this defence for their eyes seems to be particularly necessary, to protect them from external injuries, as well as from too much light when flying opposite to the meridian sun. The *sight* of birds is said to be much more piercing, extensive, and exact, than in the other classes of animals; and I have often observed that the *eye* of a bird is greatly larger in proportion to the size of the head, than the eyes of quadrupeds.

Jane. Is it true that some birds which are with us in the summer, travel into other countries in the winter?

Miss Angerstein. Certainly they do, my love. Many of the birds of our own island, directed by a peculiar and unerring instinct, retire before the commencement of the cold season, to the southern parts of Africa, and again return in the spring. It is supposed that a deficiency of food is the principal cause of the migration of birds; or the want of a secure and proper asylum for hatching their eggs and feeding their young.

Elizabeth. But how can they find their way to such distant countries ?

Miss Angerstein. The same Almighty Power which teaches them the peculiar method of building each their various sorts of nests, guides them through the pathless air. *Instinct* is to birds what reason is to man. It is this that prompts the wild ducks, at the approach of winter, to seek milder climates. They all assemble on a certain day, and generally form themselves into two lines, united in a point, something like a > reversed. The bird which forms the point, cuts the air, and makes way for those that follow ; and these always lay their bills upon the tails of those which go before.

Jane. How tired the leading bird must be, before he gets to the end of his journey ; particularly if they extend their flight to Africa.

Miss Angerstein. It would be, indeed, a most fatiguing station, if the same bird always continued in front ; but this is not the case. The leading bird is only charged with this office for a time : he goes from the *point* to the *tail*, in order to rest, and another takes his place. When tired, he is relieved by a third ; and in this way the strongest birds share this duty among them. The

wild ducks which visit our islands, do not go any further south : they come to us from Iceland, Greenland, Norway, Lapland, &c. about October, and leave us again in February or March. Cranes, which also adopt this mode of migrating, and are a much larger bird, leave the north of Germany about the middle of October, for a warmer country, when thousands of them may be seen, bending their flight southwards. Very soon after they have been seen in Tuscany, about the middle of February, they are again found in the south of Italy. Where they retire to in the depth of winter is not known, but it is thought they visit the tropical climates.

Elizabeth. Do all migratory birds travel in large flocks, as you have described ducks and cranes to do ?

Miss Angerstein. I believe they mostly do; though it is said that some make the voyage quite alone, others with their mates and all their family, and others in very small numbers. But this, as well as the various countries to which they retire, cannot be clearly ascertained ; for though, from the observations which have been made on the subject, we know a great deal more now than formerly, still much is left to conjecture.

Emily. Now, dear Miss Angerstein, Fanny and I are come to claim our stations by your side. Do you know, we have been walking very close to you for some time, and have been quite pleased with the manner in which you say birds travel. Do tell us how they contrive to build their nests so neatly, and how they know the right season for doing it?

Miss Angerstein. You know, my dear little girls, that birds have not *reason* to guide them; but the good God who created them, bestowed *instinct* on them, and on all the brute creation. It is this that points out to them the necessity of forming the outside with coarse materials, as a foundation, and then lining it within with softer and more delicate substances.

Fanny. But what is instinct?

Miss Angerstein. I can hardly define it, so as to make it intelligible to you; but if, when I have explained it to you as well as I can, you do not understand me, you must tell me so, and I will try again. Instinct is that desire or aversion, acting in the minds of animals, which induces them to perform or avoid such actions as are either essential or hurtful to their well-being. For instance: instinct directs each bird to choose

that material, and to adopt that form for its nest, which best suits the constitution and number of its young ; and in animals of the same species, instinct is invariably the same. Every wren builds its nest in the same manner now as it did centuries ago ; so that it seems to be some inward but irresistible power that induces them to do so. Instinct differs from *reason* very clearly in some points ; for it teaches animals, as well as man, the necessity of sheltering themselves from the inclemencies of the weather, and guides each species to construct their habitations in *one uniform* manner : whereas *reason* enables man to choose a dwelling and situation peculiarly adapted to his own taste and convenience ; and scarcely any two men would build their houses *exactly* alike, even under similar circumstances.

Fanny. Then *instinct* is what we call *sagacity*, and is fixed in animals from the time of their creation. They cannot avoid acting as God directs them. But papa told me that our *reason* increases as we grow older.

Miss Angerstein. So it does, my dear. Your little brother, who is only a few months old, would put his finger into the candle, or clasp a

sharp knife, without being at all aware (till he felt the pain) that either the one or the other would do him any harm. In the course of time his *reason* will open, and he will think of what happened to him when he did so, and avoid touching the candle or knife for fear of being hurt; so that, from his own trifling experience, his *reason* would increase. But it is to education that he will mostly owe the improvement of his reasoning faculties.

Fanny. From what you have said, I think I understand pretty well what is meant by instinct.

Emily. *Instinct* is to animals, what *reason* is to man. Is not that what you understand, Fanny?

Fanny. Yes, that is it; but I did not know what to say. Thank you, Emily, for helping me.

Miss Angerstein. Suppose we say, Fanny, that *instinct* is the faculty or power of always acting in the fittest manner, without thought or reflection, or without even knowing why.

Fanny. Oh! now I understand that better than what you told me before, because I know animals do not think, but man does.

Miss Angerstein. Exactly so, my love. Man

reasons on what is to be done, judges for himself, and decides on the conduct most likely to make him happy; but man often errs, and takes the *wrong* instead of the *right* path. However, he can see his error, and correct his conduct. It is this power of judging between *good* and *bad*, *right* and *wrong*, which makes him an *accountable being*, subject to be praised or blamed, rewarded or punished; and as his soul is immortal, and will live for ever, the consequences of his behaviour in this world will not end here, but will render him happy or miserable in the world to come. This is not the case with the brute creation; for possessing, to a certain degree, the ability to secure or defend themselves from the attacks of their enemies, as well as the means of finding nourishment for themselves and their young, yet we never find irrational animals go on in a state of progressive improvement, as man does: they always continue the same. Beavers were as industrious, and as good architects, a thousand years ago, as they are now: they have made no improvements. Indeed, they could not; for, as far as their powers go, they are perfect. But not one, amongst all the tribes of animals, has the privilege of knowing his Creator,

the Lord of heaven and earth, but man : not one enjoys the glorious privilege of obtaining heaven and eternal life, but man. Ought not this, my dear children, to fill us with gratitude, and encourage us to neglect no opportunity of improving the *reason* with which we have been gifted ; and to endeavour to secure the love of our Maker, by constantly remembering the " Hand that formed and protects us."

Elizabeth. Indeed it ought ; and I hope, after what you have just told us, I shall be more sensible of the value of those faculties which so distinguish us from the brutes, and neither neglect nor misuse them.

Miss Angerstein. I trust, my Elizabeth, that you will, and then our conversations on your favourite topic will have been far more beneficial than I had ventured to hope.

Emily. Now, perhaps, you will tell us something about the building of their nests ; for we now understand *why* they build them, and *how* they know the *right time* for doing it. You have just explained to us, that they are guided by *instinct*, and I shall not forget it.

Miss Angerstein. I will, with pleasure, my love, tell you what little I know ; but the sub-

ject is much too curious for me to satisfy your curiosity properly. I can only give you a general idea ; but, for particulars, you must read and consult some of the books on natural history, which have been published for young people. Birds, in general, construct their *nests* with astonishing art ; and, in most of the species, both male and female assist in this interesting operation. They each bring materials to the place ; first, sticks, moss, or straws, for the foundation and exterior ; then hair, wool, or the down of animals or plants, to form a soft and warm bed for the eggs, and for the unprotected bodies of their tender young, when hatched. The outsides of the nests bear in general so great a resemblance in colour to the surrounding foliage or branches, as not easily to be discovered, even by persons in search of them. Your favourite little bird, the robin, generally builds its nest by the roots of trees, or in holes in old walls ; but always in a very concealed spot, near the ground. The nest is composed of dried leaves, mixed with hair and moss, and lined with feathers.

Emily. It is a sweet little bird. We always save some crumbs for it, in the winter, and often

we see it come to the window, and pick them up.

Miss Angerstein. Its social disposition has greatly endeared it to the human race; and, in many countries, this familiarity has given it a peculiar denomination. The inhabitants of Bornholm, an island in the Baltic Sea, belonging to Denmark, call it *Tommi Liden*; the Norwegians, *Peter Ronsmad*; the Germans, *Thomas Gierdet*; and we give it the familiar name of *Robin Redbreast*.

Emily. When Alexander comes home, I must tell him this, for he is as fond of robins as we are. And I do not think he knows it, or we should have heard of it before: he is always so ready to amuse us, and relate any thing which he thinks will please us. How I wish you knew our dear brother!

Miss Angerstein. I day say it will not be very long before we meet; and you have all spoken so affectionately of him, and described him as such a good brother, that I am greatly prepossessed in his favour, and I make no doubt we shall very soon become acquainted.

Fanny. I shall teach him to love you, by telling him how good and kind you are.

Miss Angerstein kissed the little girl, and thanked her for her good intentions; and then asked them if they had heard enough about birds' nests.

Emily. If you are not tired of talking to us, we should like to know how some other birds build their nests, for I dare say they do not all build alike."

Miss Angerstein. I am much pleased, Emily, that you begin to consider the comfort of others, as well as your own gratification. But I am not tired, my love, therefore I shall have great pleasure in obliging you. I believe I before mentioned, that *all birds of the same species* construct their nests alike; but that every different species has some peculiarity in its mode of building. The nest of the *golden-crested wren* (which is the smallest of all the British feathered race) is an interesting fabric. One side of it is frequently interwoven with the leaves of the tip end of the branch of a fir-tree, by which means it swings about, in high winds, like a pendulum. The outside is composed of various sorts of moss; and within it is lined with wool, hair, and feathers. The shape of the nest is very curious, being oval, with a small aperture in the middle of the side

for entrance: it is very deep, for this little bird lays from *ten* to *eighteen* eggs, scarcely larger than peas; and it seems most surprising, how this little creature can rear such a numerous family in almost total darkness, and feed them, without missing some of the many little gaping beaks.

Jane. What a droll bird it is, to hang its nest in that manner. Do any others do the same thing?

Miss Angerstein. Yes, my dear. In the fens of Bologna, Tuscany, Lithuania, Poland, and Germany, there is a species of the titmouse, that forms its nest of a thick, close web, almost like cloth, which it weaves from the down of the thistle, dandelion, and other flowers, and hangs it to some small, pliant branch, over a stream. The peasants in those countries regard them with superstitious veneration: one of them is usually suspended near the door of each cottage; and the possessors esteem it a defence against thunder, and its little architect as a sacred bird.

Fanny. You said, the titmouse *move* its nest from thistle-down. How can a bird *weave*? I thought a great many things were necessary, before a person could make any sort of cloth.

I have seen Jock Fraser, just by the mill, weave, very often; but he has a *large machine*, and a little thing he called a shuttle.

Miss Angerstein. Very true: but you must recollect, that though the inferior animals do not possess *reason*, which has enabled *man* to improve upon such hints, as he possibly received, in the first instance, from them; yet they are guided by that innate and unerring principle which we call *instinct*, and which leads them to do many things, which even *man*, who is undoubtedly their superior, cannot do. I have never seen the sort of nest I am describing to you; but I have read, that it is *woven*, or *made*, by the bill of the little bird, and very similar to cloth: at the same time, we must not forget, that we use the word to *weave*, when we speak of a spider's web, which resembles lace, more than cloth.

Elizabeth. Those lines you gave me, from *Hurdis's Village Curate*, upon a bird's nest, are beautiful: shall I repeat them to my sisters?

Miss Angerstein. Do, my love.

Elizabeth.

“ Mark it well, within, without :
No tool had he that wrought, no knife to cut,
No nail to fix, no bodkin to insert,
No glue to join; his little beak was all.

And yet how neatly finish'd! What nice hand,
With every implement and means of art,
And twenty years' apprenticeship to boot,
Could make me such another? Fondly, then,
We boast of excellence, whose noblest skill
Instinctive genius foils."

Emily. What does *to boot* mean? Elizabeth said, "With twenty years apprenticeship *to boot*."

Miss Angerstein. That is a poetical expression, which signifies, "*with the advantage of twenty years' apprenticeship*." It is seldom used, except in poetry; but when you are old enough to read Shakspeare and Milton, you will meet with it there."

Fanny. Why do those titmice always hang their nests over a *stream*? and what sort of titmice do you call them?

Miss Angerstein. Linnæus gave them the appellation of *penduline titmice*, from the manner in which they suspend their nests; and the reason of their frequenting watery places is, for the sake of the aquatic insects on which they feed.

Jane. Pray, ma'am, tell us a little more about birds' nests: it is so very amusing.

Miss Angerstein. I am afraid, my love, my little

stock of knowledge is come to an end, for I cannot call to mind any thing more at present.

Fanny. I am very sorry: I thought you would tell us about the little swallows, which were so busy, some time ago, over our bed-room window.

Miss Angerstein. The species of swallow which built at your window, is called the *martin*; and, as you saw, its nest was composed of mud on the outside; and the inside is made soft, by a lining of small straws, grass, and feathers, and sometimes by a bed of moss, interwoven with wool. But nothing is more common, than for the house-sparrow, as soon as the shell is finished, to seize on it, eject the owner, and line it, according to its own peculiar manner, with feathers and down.

Jane. Do all swallows build in the same manner as the house-martin?

Miss Angerstein. No, Jane: one species has obtained the name of the *chimney* swallow, from building its nest, generally, in the *inside* of our *chimneys*, a few feet from the top; it is supposed, in order to secure the young brood from rapacious birds, and particularly from owls, which are frequently found to fall down chimneys, probably in their attempts to get at the nestlings. Another,

called the *sand-martin*, dig round and regular holes in the *banks* of rivers, and in the perpendicular sides of *sand-pits*. These holes run horizontally, and sometimes in a serpentine direction, to the distance of two or three feet ; and, at the further end, these birds construct their rude nest of grass and feathers. It is said, that this species is so strangely annoyed by fleas, that these vermin have been sometimes seen swarming at the mouths of their holes, like bees on the stools of their hives. All these species, as well as the *swift*, or *black martin*, which builds its nest under the eaves of houses, in church steeples, and other lofty buildings, of grass and feathers, are constant visitors to Great Britain ; but there is one species, which is not to be met with but in the East, the nest of which is still more curious.

Jane. Then swallows are migratory birds ?

Miss Angerstein. They are generally considered so, my love ; though some writers on Natural History, maintain that *swallows* do not leave this country ; but that they lie concealed, and in a torpid state, during winter, *under water* : that the martins lie concealed during the same time, in crevices of rocks, and other lurking-places above-ground : that the *sand-martins* remain in the

holes in which they form their nests : and that the *swifts* continue all the winter in their holes in churches and old buildings. But that the actual migration of the swallow tribe does take place, has been fully proved, from a variety of well-attested facts ; most of which have been taken from the observations of navigators, who were eye-witnesses of their flights, and whose ships have sometimes afforded them resting places in their toilsome journeys.

Elizabeth. Why, then, is it said they remain here, if it can be so well proved that they have been seen on their journeys ?

Miss Angerstein. Those birds that have been hatched so late, as not to have acquired sufficient strength to accompany their companions in their distant flights, may perhaps remain here, and be obliged to shift as they can during the inclement season of winter ; and this will account for their being occasionally found in a torpid state, in each of the situations I have mentioned, both here and in other countries ; but were the whole of these species to remain, as their numbers are immense, we should undoubtedly be supplied with more numerous, and more generally known instances than have hitherto been recorded.

Emily Where is it supposed they pass the winter ?

Miss Angerstein. In Senegal, and various other parts of Africa. But they are known to return to their old nests for several years together. M. de Buffon, the celebrated French naturalist, relates, that a shoemaker at Basle, in Switzerland, put a collar on a swallow, with this inscription : "*Pretty swallow, tell me, whither goest thou in winter ?*" And, in the following spring, received, by the same little courier, the following answer : "*To Anthony at Athens : why dost thou enquire ?*" It is, however, conjectured, that the answer had been written by some one who had caught the bird in Switzerland ; for it was known to the ancient writers, that though the swallows passed half the year in Greece, yet they always spent the winter in Africa.

Elizabeth. That is a curious anecdote ; and I should much like to know who wrote the answer.

Miss Angerstein. At this distance of time, that is impossible ; but it is a proof that the birds return to their nests, after they have paid their visit to another climate.

Emily. You were going to tell us about a

curious nest, when Jane interrupted you: will you be so good as to give us an account of it now.

Miss Angerstein. I think you will allow it is curious, when I tell you, that it is considered a great delicacy, and eagerly eaten by the epicures of Asia, as one of the greatest dainties.

“Eat a bird’s nest!” exclaimed all the children at once: “that is curious! What can it be made of? and how do they dress it? What is the name of the bird that makes this nest?”

Miss Angerstein. Patience, my little girls: how am I to answer so many questions all at once? I shall forget them half, before I have settled which among them to answer first, however anxious I may be to oblige you: besides, we are now at home.

“Oh, yes, ma’am,” said little Fanny, “but here is your favourite seat, and if there is time before breakfast, do tell us the name of the bird, and I will give you three kisses for every question you answer.”

Miss Angerstein. That is such an irresistible bribe from a good little girl, that I must sit down and tell you a little about these nests, particularly as there is plenty of time before breakfast. The

bird is called the *esculent swallow* : it is smaller than our wren, and is an inhabitant of the various islands in the *Soolo Archipelago*.

Elizabeth. I never heard of the *Soolo Archipelago* before : will you be so good as to tell me where it is, that I may find it in the map when I go in ?

Miss Angerstein. *Soolo* itself is the largest of a cluster of islands in the Indian Ocean, between Mindanao and Borneo, governed by a Mahometan sultan, whose authority extends over the whole of these small islands, and which are called the *Soolo Archipelago*. You all know where to look for Borneo, therefore you cannot miss the islands I have mentioned ; but if you find any difficulty, bring them to me, and I will assist you.

Fanny. I thought there was but one Archipelago, and that was between Turkey in Europe and Turkey in Asia.

Miss Angerstein. That is, by way of eminence, called *THE Archipelago*, my love ; but any portion of the sea filled with islands, is termed an Archipelago. The most considerable (after *the Grecian Archipelago*, with which you are acquainted,) is the *northern*, or *Aleontian Archipelago*, situ-

ated between the peninsulas of *Kamtschatka*, in *Asia*, and of *Alaska*, in *America*, containing the *Aleontian* and the *Fox Islands*.

Jane. How tiresome you are, *Fanny*! I am so afraid we shall be obliged to go in, before we know about these curiosities. Pray, ma'am, tell us what they are made of, and what they are like?

Miss Angerstein. I am not surprised at your anxiety to hear all particulars, *Jane*; but you must not allow it to get the better of your good temper. That was very hastily spoken, and if you wish to oblige me, you will check yourself, when you again feel inclined to speak so impatiently.

Jane coloured deeply; and, after a little struggle with her rising temper, she answered *tolerably* cheerfully, "I am sorry I was so impatient; but if you will excuse me, I will try not to offend again."

Miss Angerstein kissed the little girl's burning cheek, and praised her for having so soon conquered her inclination to ill-humour, and then said: "We will now talk of the nests, which, in shape, are said by some to resemble a *half lemon*; and by others, a *saucer*, with one side flattened, which

adheres to the rock. The substance of which it is composed, is like isinglass; and the several layers of it are very apparent, it being fabricated from repeated parcels of a soft, slimy substance, in the same manner as the martins form their nests of mud."

Elizabeth. Is it not known what they use in building the nests?

Miss Angerstein. Not with any certainty, I believe, my love, for I have read various accounts of them. One author asserts, that they make use of the *sea-qualm*, (a kind of *cuttle-fish*;) another, that *sea-worms* are the materials employed; and a third, that the glutinous sea-plant, called *agal-agal*, and which abounds in those seas, is the only thing of which they are composed. It has also been said, but upon what foundation I know not, that the swallows rob other birds of their eggs, and, after breaking the shells, apply the white of them to these little structures.

Emily. How do they dress them for table; for, if they are like isinglass, they will all melt away?

Miss Angerstein. That is one way of preparing them, my little girl. The best sorts of nests are dissolved in soup, in order to thicken it, and

are said to give it an exquisite flavour. Sometimes they are soaked in water, to soften them, then pulled in pieces, and after being mixed with *ginseng*, are put into the body of a fowl as a *stuffing*, which is afterwards stewed for a great many hours, and forms a delicate dish among the Chinese particularly.

Elizabeth. What is *ginseng*.

Miss Angerstein. It is an Asiatic root, of a most agreeable aromatic smell, of an oblong figure, never growing to any great size, being generally four or five inches long, and its thickness that of one's little finger. The Chinese and Tartars collect the root of the plant, with infinite pains, at two seasons of the year, spring and autumn. The Chinese value *ginseng* so highly, that it sells with them for three times its weight in silver: they, as well as the Asiatics in general, think it an almost universal medicine, and readily give themselves over, when it will not cure them.

Jane. Are these nests ever used in English cookery?

Miss Angerstein. It is a little surprising, my dear, that among other luxuries, imported by us from the East, these nests should not have found

their way to our tables ; but, as yet, they are so scarce in England, that they are kept as rarities in the cabinets of collectors of curiosities.

Elizabeth. Perhaps they are not suited to European palates. Are they very expensive?

Miss Angerstein. The whitest and best sell in in China at from one thousand to fifteen hundred dollars the *picle** ; the black and dirty ones, for only twenty dollars. But, if one of you will fetch me my " Common Place Book," I will read you a short description of these nests, which is extracted from Sir George Staunton's account of Lord Macartney's embassy to China.

Willing to show that she was perfectly good-tempered, Jane ran like a lapwing, to fetch the book ; and before the others (who were all equally ready to oblige) had fairly got upon their feet, she was half over the lawn, and returned in a few minutes with her prize.

" Thank you, Jane," said Miss Angerstein : " if you are always equally quick in attending to my messages, I must call you my little Mercury.

Jane looked pleased at having had an opportunity of obliging Miss Angerstein ; and, with

* Which weighs about twenty-five pounds.

the rest, waited with anxiety, but patiently, till Miss A. had found the article she wanted, when she gave the book to Jane, saying: "As you were my messenger, and are so fond of reading aloud, Jane, you may read it to your sisters, now that you have regained your breath."

Jane took the book with great delight, because she saw, from Miss Angerstein's manner, that the victory she had obtained over her temper had entirely obliterated her impatience; or, if it was remembered by her instructress, it was forgiven. She then read very distinctly, as follows:

"In the Cass (a small island near Sumatra) were found two caverns, running horizontally into the side of the rock; and in these were a number of those bird's nests so much prized by the Chinese epicures. They seem to be composed of fine filaments, cemented together by a transparent viscous matter, not unlike what is left by the foam of the sea, upon stones alternately covered by the tide, or those gelatinous animal substances found floating on every coast. The nests adhere to each other, and to the sides of the cavern; mostly in rows, without break or interruption. The birds that build these nests are small, grey swallows: they were flying about in considerable

numbers ; but were so small, and their flight was so quick, that they escaped the shot fired at them. The same sort of nests are said to be also found in deep caverns, at the foot of the highest mountains, in the middle of Java, at a distance from the sea ; from which source, it is thought, that the birds derive no materials, either for their food, or the construction of their nests ; as it does not appear probable they should fly, in search of either, over the intermediate mountains, which are very high, or against the boisterous winds prevailing thereabout. They feed on insects, which they find hovering over stagnated pools between the mountains ; and for the catching of which their wide-opening beaks are particularly adapted. They prepare their nests from the best remnants of their food. Their greatest enemy is the kite, which often intercepts them to and from the caverns. The nests are placed in horizontal rows, at different depths, from fifty to five hundred feet. The colour and value of the nests depend on the quantity and quality of the insects caught ; and, perhaps, also on the situation where they are built. Their value is chiefly ascertained by the uniform fineness and delicacy of their texture: those that are white and transparent being most

esteemed, and often fetching, in China, their weight in silver. These nests are a considerable object of traffic among the Javanese, many of whom are employed in it from their infancy. The birds, after having spent nearly two months in preparing their nests, lay each two eggs, which are hatched in about fifteen days. When the young birds become fledged, it is thought the proper time for seizing upon their nests, which is done regularly three times a year, and is effected by means of *ladders* of *bamboo* and *reeds*, by which the people descend into the caverns; but when these are very deep, *rope-ladders* are preferred. This operation is attended with much danger, and several perish annually in the attempt. The inhabitants of the mountains generally employed in this business, begin always by sacrificing a buffalo; which custom is always observed by the Javanese, on the eve of every extraordinary enterprise. They also pronounce some prayers, anoint themselves with sweet-scented oil, and smooth the entrance of the cavern with gum-benjamin. Near some of the caverns a tutelary goddess is worshipped, whose priest burns incense, and lays his protecting hands on every person intending to descend. A flambeau

is carefully prepared at the same time, with a gum which exudes from a tree growing in the vicinity, and which is not easily extinguished by fixed air, or subterraneous vapours."

Elizabeth. There is considerable difference in the accounts given of these wonderful nests ; and, from the situation in which the birds are represented as building, I should suppose it must be very difficult to ascertain what materials are used. It is curious, however, that they should be brought to the table without its being known what they are composed of. Do you know, ma'am, when they were first eaten ?

Miss Angerstein. I have not the slightest idea ; for, like every thing else connected with the Chinese empire, there is a certain degree of mystery attached to them, which time alone can solve.

Jane. How very superstitious the Javanese appear to be ! To sacrifice a buffalo ! It seems so ridiculous ?

Miss Angerstein. However ridiculous we may think such a ceremony, my little girl, and greatly as we ought to pity the ignorance of the poor natives, still we, as *Christians*, may learn much from it. They never begin any undertaking,

without offering to their imaginary deity, what they think most acceptable to him : and if these Pagans are so far aware of their obligation to some superior Being, as to repeat prayers, and invoke his blessing, should not we, who have the blessed Gospel to teach us our duty, and to reveal to us the Great Author of our being, and Creator of the world, be still more desirous of pleasing and obeying Him, whose eye is ever over us, and whose protecting hand guards and delivers us from so many dangers ? Their example, instead of exciting our ridicule, should teach us humility ; for, had they our advantages, is it not probable that they would make a much better use of them, and prove much better Christians than ourselves. It is in this light we must consider such little instances of superstition, and then we shall benefit from the relation of them. Now we must prepare for breakfast.

CHAPTER VI.

"OH, my dear Miss Angerstein!" said Elizabeth, when the party had visited the cow-house, and were on the road to Jane Pierce's cottage; "Oh! my dear Miss Angerstein, will you tell us what nurse really means by *Johanny Groat* and his house. When she was dressing Emily and Fanny this morning, she threatened to send them to *Johanny Groat's* house, if they did not make haste; but when we asked her where the house was, and who the good man was that inhabited it, she could tell us nothing more, than that it is somewhere on the sea-shore, at the *further end* of Scotland; and she believed the man was a Frenchman, or a Spaniard. So we settled to ask you about it; and we know, if there is such a place, *you* will be able to tell us where it is, at any rate, and perhaps a little more."

Miss Angerstein. When we are in the house, I can show you upon the map the exact situation

of the place nurse mentioned. I will recollect as many particulars of the story as I can ; but I am not sure the account I read was quite correct, though it most likely was so in the principal points. But you must correct the name; for it is not called *Johnny Groat's*, but *John o'Groat's* house; being an abbreviation of the little word *of*, which you will the better understand when I have told you the story. As natives of Scotland, you should not be unacquainted with its most north-eastern extremity, marked in the maps as *Dungisbay Head*, or *Duncansby Head*, in the county of Caithness, opposite to which are the Orkney Islands. Near this promontory was formerly situated this most celebrated mansion, of which nothing now remains but the name, which is always used to express the *north-eastern* part of Great Britain ; as the Land's End in Cornwall is, for the *south-western*.

Emily. Then; if nurse wants to get rid of us, she had better send us somewhere else, for that is not so very far from home.

Miss Angerstein. Sufficiently distant for her to have no further trouble with you, my love ; but I hope you are too sensible of her care and affection, ever to behave otherwise than properly to

her. She has nursed you all from infants, and it would be most ungrateful to forget what she has done for you.

Emily. We were not naughty this morning, when she threatened to transport us there ; but she was afraid we should not be dressed when your bell rung, because we were called later than usual, so she was hurrying us a little.

Miss Angerstein. She is so worthy a woman, and so fond of you all, that if you wish to oblige me, you must always be well-behaved and kind to nurse. You know how particular your mamma is in this respect.

Elizabeth. They have all been very good, lately ; and even nurse, who did not at first like you to come to us, says, the day of your arrival was a happy one for every body in the house, because we all agree so much better, and give so much less trouble than we used to do. Every body loves you, here ; but nobody has so much reason to love you as I and my sisters, for how happy you have made us.

The affectionate girl then threw her arms round Miss Angerstein, and kissed her.

Much affected by this artless expression of kindness and affection, Miss Angerstein returned

her salute, and said : " I am but too happy, my love, to see you so sensible of what I am doing for your ultimate improvement in mind and character. While you thus reward me, I shall never feel my present employment a task ; for though great fatigue must always be the portion of an instructress, still there is a great and indescribable pleasure (when the pupils are docile and affectionate) in seeing the good effects of her labour. Now let us return to John o'Groat's house.

Fanny. I shall tell nurse where it is. May I show it to her in the map ?

Miss Angerstein. Yes, my little girl, when I have first shown it to you ; and you may tell her as much of the story as you can recollect, when you have heard it. Now listen.

" A great many years ago, said to be in the reign of James IV. of Scotland, three brothers arrived in Caithness, from the south of Scotland, with a Latin letter from the king, recommending the inhabitants of this remote part of his dominions to behave kindly to the strangers, who were Dutchmen, and were named *Malcolm, Gavin, and John de Groat.* They purchased the

lands of Warfe and Dungisbay, and divided them equally between them; but in time their families increased, and there came to be *eight* different proprietors of the name of *Great*, who possessed these lands among them, and lived peaceably and comfortably in their small possessions, for a number of years: and to celebrate the arrival of their ancestors on that coast, they established an annual meeting. On one of these occasions a dispute arose, as to who had a right to sit at the head of the table, and enter the room first; but as each claimed the *chieftainship* of the clan, the quarrel might have proved fatal to some, if not to all of the party, had not *John de Groat* (who was a very sensible and peaceably disposed man) interposed, and prevented any further ill effects. He was proprietor of *the ferry* from Dungisbay Head across the Pentland Frith, to the Orkney Islands, and, by his constant intercourse with strangers, had acquired more knowledge of mankind than the others. He saw the danger and folly of such disputes, and having been so fortunate as to procure a moment's silence, he began by recalling to their recollection the comfort and happiness they had hitherto enjoyed, since their arrival in that remote corner, and which, he said,

was entirely owing to the harmony which had subsisted between them. He assured them, that as soon as they appeared to quarrel among themselves, their neighbours, who till then had treated them with respect, would fall upon them, take their property away, and expel them from the country: he therefore conjured them, by every thing that was dear to them, to return quietly that night to their several homes; and he pledged himself, that he would satisfy them all with respect to precedency, and prevent the possibility of such disputes among them at their future anniversary meetings. After a little discussion, they all agreed to his proposal, and departed in peace. To fulfil his engagement, John de Groat built a room distinct by itself, of an octagon shape, with eight doors and windows in it; and having placed a table of oak of the same shape in the middle, he, at the next anniversary meeting, desired each of them to enter at his own door, and to sit at the head of the table, taking himself the seat that was unoccupied. By this ingenious contrivance, they all found themselves on a footing of equality, and their former harmony and good humour were restored. That building was then named *John o' Groat's house*; and though it

is now totally gone, the place where it once stood still retains the name, and most certainly deserves to be remembered, for the good sense of the architect.

Elizabeth. I cannot think how you contrive to know so much : let us ask you what we will, you can always give us an explanation.

Miss Angerstein. You must recollect, my love, the difference of age between you and I, and then you will not be surprised that I should know more than you. My knowledge is very limited, I assure you ; but what little information I possess, has been acquired by attentively reading the best writers upon various subjects, and extracting from them, into my "Common Place Book," such parts as I wished to impress upon my mind. These facts I frequently read over, which refreshes my memory, and prevents their escape, which would most certainly be the case, without this precaution. When I had settled to come to reside here, I employed all my leisure time in reading every work that fell in my way, relating to Scotland, either descriptive or historical ; and in one of these I met with the story I have just related to you. Now, then, my *extensive knowledge* will no longer surprise you.

Jane. Yes, it does: for though I read a great deal, yet I cannot recollect it all in the way you do. Why is it so?

Miss Angerstein. For want of more attention while reading. You allow your eye to ramble over the words, while your mind is wandering to other things; consequently, you form no *clear idea* of what you have been engaged upon. You should fix your attention upon your book, and nothing should be allowed to disturb you, from the first moment you take it up till you again close it. This habit of close thought, must cost some little trouble at first, to such giddy little girls as my Jane; but its good effects will be so visible, that every succeeding effort will render it more easy, and in a short time you will be amply repaid for the exertion. But what do you think of my story?

Jane. It was a most fortunate thought to build such a house, and I wish it were standing now: I should beg papa to take us all to see it.

Emily. While you were telling us the story, I could not help comparing *Elizabeth* to *John de Groat*: she is always the peacemaker in all our disputes; and before you came, I do not know

what we should have done, had she been as quarrelsome as ourselves.

Miss Angerstein. I am glad to find you have attended to the moral of the story, which most strongly inculcates the necessity of mutual forbearance, and the advantages of peace and harmony among members of the same family. You all know the fable of the old man and the bundle of sticks ?

They all remembered it very well, and seemed to wonder what that could have to do with John de Groat. " But," said Miss Angerstein, " you have none given me the moral of the fable. Tell me, Jane, what it is."

Jane. In our fable-book, the only thing said, is, that *wit* will conquer difficulties sooner than *strength* ; or something of that kind.

Miss Angerstein. That is not exactly the moral intended to be inculcated, my dear. So long as a family continue united, they will be respected (as John de Groat very properly observed) by their neighbours and acquaintance ; but the moment they quarrel among themselves, and each stands alone, they may be as easily overcome, as the sticks were easily broken when the bundle was untied. This is the real moral of

the fable; and I hope, my dear children, that the story of "John o'Groat's House," will recur to your memory, whenever you feel inclined to dispute with each other, and make you sensible of the blessing of possessing such near and dear relations as sisters, and of the advantages which will always arise from a peaceable and affectionate behaviour towards each other.

Emily. When we tell the story to nurse, and the moral of it too, she will always be reminding us of it.

Miss Angerstein. Perhaps so: but as you must often be without nurse, it will be much best to make a resolution of thinking of it yourselves, and then the dispute must end.

Fanny. As you wish it, we will all try: won't we, Jane.

"Yes, Fanny, I hope we shall: I am sure we do not often quarrel now.

Miss Angerstein. Not so much as you did; but there is still great room for amendment. You are not sufficiently obliging in your manners; and frequently, when you do not absolutely quarrel, you are very unamiable: you speak harshly, and refuse to do many little things which would not put you to any inconvenience,

merely from having acquired the bad habit of considering *self* in every thing. Numberless little compliances are necessary, in the daily intercourse of members of the same family: to the *selfish*, these occasion continual mortification and uneasiness; for a trifle which opposes the will of a child accustomed to consider *self* in every thing, becomes a matter of importance. This you must all have felt; but if you strive to encourage more liberal feelings, and to behave to your sisters as you would wish them to behave to you, you will find no pain in complying with their wishes, and in yielding up your own fancies and pleasures, cheerfully and readily; and in so doing, you will be far happier than you were before. Elizabeth, repeat those beautiful lines of Mrs. Hannah More's, upon this subject.

Elizabeth.

Since trifles make the sum of human things,
And half our misery from our foibles springs;
Since life's best joys consist in peace and ease,
And few can save, or serve, but all can please;
Oh! let the ungentle spirit learn from hence,
A small unkindness is a great offence.
Large presents to bestow, we wish in vain;
But all may shun the guilt of giving pain.
To bless mankind with tides of flowing wealth,
With power to grace them, or to crown with health,

Our little lot denies ; but Heaven decrees
To all, the gift of ministering to ease.
The gentle offices of patient love,
Beyond all flattery, and all price above ;
The mild forbearance of another's fault,
The taunting word suppress'd as soon as thought ;
On these Heaven bade the sweets of life depend,
And crush'd ill fortune when it made a friend.

A solitary blessing few can find ;
Our joys with those we love are intertwined ;
And he whose wakeful tenderness removes
Th' obstructing thorn which wounds the friend he loves,
Smooths not another's rugged path alone,
But scatters roses to adorn his own.
Small slights, contempt, neglect, unmix'd with hate,
Make up in number, what they want in weight ;
These, and a thousand griefs, minute as these,
Corrode our comforts, and destroy our peace."

Miss Angerstein. Nothing can be more descriptive of the great importance of a kind and gentle temper, than these lines ; and I hope, in time, to make you all sensible of its inestimable value. Now, Jane, do you close this subject, by that passage from the "Economy of Human Life," which you learnt the other day.

Jane. "You are the children of one father, provided for by his care ; and the breasts of one

mother gave you suck. Let the bonds of affection, therefore, unite thee with thy brothers and sisters, that peace and happiness may dwell in thy father's house.

“ And when you are separated in the world, remember the relation that binds you to love and unity; and prefer not a stranger to thy own blood. If thy brother is in adversity, assist him; if thy sister is in trouble, forsake her not. So shall the fortunes of thy father contribute to the support of his whole race; and his care be continued to you all, in your love to each other.”

Miss Angerstein. Now then I am ready for your favourite subject. Where did we leave off?

Jane, glad to change the subject of discourse, which was more particularly applicable to herself than to either of her sisters, very readily supplied the required information, by telling Miss Angerstein, that their last conversation was upon the *second* class of the Animal Kingdom, *Aves*, or Birds, which contained *six* orders, all of which she and Elizabeth had committed to memory, and could repeat very perfectly.

Miss Angerstein then desired Emily and Fanny to take their usual run, as what they were now going to converse about, would have no charms

for them. The little girls obeyed immediately; but had not gone very far before they returned.

"I hope, ma'am," said Fanny, "that if you recollect any pretty story to tell my sisters, you will call us to hear it also: I am so fond of stories."

"I certainly will, my love; but in all probability you have heard the only story that I can afford time for this morning. We have been entertained with 'John o'Groat's House,' so that you must not expect another."

After this, they bounded away, and amused themselves in collecting wild flowers, while the remainder of the party resumed the conversation.

Miss Angerstein. The next class which must now claim our attention is, as I hope you recollect, *Amphibia*, or Amphibious Animals, so called, because they can live either on land or in the water. They have peculiar organs of respiration, being of a mixed kind, between the perfect lungs of quadrupeds and birds, and the *gills*, or respiratory organs of fishes; by these means, they can breathe in air like the former, and live in the water like the latter.

Jane. That must be very pleasant; because, if they are pursued by an enemy on land, they

may plunge into the water ; and if any of the monsters of the deep threaten them, they have only to make their way to the shore. How many Orders are there of these highly-favoured animals ?

“ Only two: *Reptiles* and *Serpents*.

Jane. Reptiles and Serpents! And are these the creatures I have been calling *highly-favoured* animals ?

Miss Angerstein. Exactly so, my dear ; and in every period of your life you will always be liable to the same disappointment you now feel, if you form a hasty judgment, without enquiring more into particulars. But why do you look so disgusted, Jane ?

Jane. Because the very words convey disagreeable ideas. *Reptile* is used for any living thing that we hold in extreme abhorrence, and *serpents* are such venomous animals.

Miss Angerstein. Yet, I assure you, Jane, that this class of animals is well worth spending a little time in forming a better acquaintance with them ; and I think, before we have quite done with them, you will own yourself amply repaid for your trouble.

Elizabeth. But many reptiles are quadrupeds.

Miss Angerstein. I believe, all reptiles have four feet, but they are *oviparous*; whereas, the quadrupeds of the first class, *Mammalia*, are *viviparous*. Here is the explanation of the *Orders*, which you must enter, as usual, into your book.

1st ORDER. *Reptiles*: which are furnished with legs; as, tortoises, lizards, and frogs.

2nd ORDER. *Serpents*: which have no legs; as, the boa, the rattle-snake, the common viper, &c. &c.

Jane. How disagreeable it is to touch such perfectly cold animals as frogs! I am glad I know to what class the ugly little things belong. I suppose the crocodile belongs to the same class and order?

Miss Angerstein. It does, my love. But did you ever observe the eye of that *ugly little thing*, as you call a frog?

Jane Oh, yes! they are remarkably large and bright.

Miss Angerstein. And so they generally are in all animals of this class; but frogs' eyes are very different from ours, as they can cover them with a

membrane, which is transparent, though of a close texture: this defends their eyes from the dangers to which their way of life exposes them, sometimes living on land, sometimes in the water. The chameleon (a sort of lizard) has the singular property of moving one of its eyes, while the other remains still—of turning one up to the sky, and looking on the ground with the other. This secures it from many dangers, and enables it to find its food more easily. Their bones also are more cartilaginous than those either of quadrupeds or birds; and several of the species, as the frogs and some of the lizards, are altogether destitute of ribs.

Jane. What do you mean, when you say that their bones are *cartilaginous*? I do not understand that word.

Miss Angerstein. To make you understand it, my love, I must explain the word *cartilage*, from which it is formed; which signifies a sort of *gristle* softer than *bone*, but harder than a *ligament*, which is a strong compact substance used for uniting the bones of animals: so that amphibious animals have *gristle* only, not *bones*.

Jane. Of what use can such animals be in the world?

Miss Angerstein. Some serve for food ; as turtles, which, as you know, are highly esteemed ; and the shell of the tortoise is of very great use, though it is only one out of the thirty-six species which furnishes that beautiful kind so much admired. The shell of a tortoise, which served as a cradle for that excellent monarch, Henry the Fourth of France, is still shown in the castle of his native place, Pau, in the department of the lower Pyrenees, province of Bearn.

Elizabeth. The shell of a tortoise large enough for a cradle ! What a size the animal must have been ! The only tortoise I ever saw, was a very small one. I was in Inverness one day, with mamma, and a sailor-boy was carrying it about as a show.

Miss Angerstein. That, most likely, was what is called the *common* or *Greek tortoise*, which is found in most of the countries near the Mediterranean Sea, in Corsica, Sardinia, and some of the islands in the Archipelago, as well as in many parts of the north of Africa ; and is seldom more than *eight* or *nine inches* long, nor does its weight often exceed *three pounds*. This kind lives mostly on land, and is therefore frequently called the *land-tortoise*, and attains a very great age. In

1813, there was living in the gardens belonging to the bishop's palace at Peterborough, a land-tortoise, which was ascertained to have been there *two hundred* years and upwards. In Greece, these tortoises form an article of food. The inhabitants also swallow the blood without any culinary preparation, and are very partial to the eggs when boiled. In the gardens of some parts of Italy, *wells* are purposely formed, in which the inhabitants bury the eggs of the tortoise, where they remain till the ensuing spring, when, by the natural warmth of the climate, they are hatched, and the young ones come forth. The tortoises feed on various kinds of herbs, fruit, worms, snails, and insects, and are kept in banks of earth.

Elizabeth. I dare say it was a land-tortoise I saw, from your description of the size ; but what kind of tortoise is it that produces the large shells you spoke of?

Miss Angerstein. The *sea* or *marine* tortoise, which is generally called turtle, and which supplies a delicious food. On the Brazilian shore, they are said to be so large as sometimes to dine *fourscore* men most plentifully ; and that, in the Indian Ocean, the *shells* serve the natives for

boats. In the island of Cuba, they are of such a size, and so prodigiously strong, that they will creep along with *five men* on their backs. The Isle of Ascension, in the South Atlantic Ocean, is also famous for the large turtles that are caught on it. Fourteen were taken in one night, the smallest of which weighed upwards of two hundred pounds. This species is called the *green turtle*, from the colour of its flesh.

Jane. This kind then is never found in Europe?

Miss Angerstein. Sometimes green turtles are caught on the European shores, when driven there by stress of weather. In the year 1752, one, six feet long and four broad, weighing between eight and nine hundred pounds, was caught in the harbour of Dieppe, a sea-port in the department of Lower Seine, after a violent storm; and a few years ago, a friend of mine saw a small one, which had been caught amongst the submarine rocks near Christchurch, in Hampshire. But they are not suited to our northern climate, being natives of the torrid zone.

Elizabeth. How long have turtles been introduced to our tables?

Miss Angerstein. The introduction of the turtle

into England, as an article of luxury, is said to have taken place within the last century. We import them principally, if not entirely, from the West Indies.

Jane. You say only *one*, out of the *thirty-six* species of tortoise, afford us tortoise-shell. Is that one species land or marine?

Miss Angerstein. The substance that we call tortoise-shell, is the production of a *marine species*, called the *imbricated turtle*, by Linnæus, but by many other writers the *hawk's-bill turtle*, from the peculiar formation of its jaws. This species is found in the Asiatic and American seas, and sometimes in the Mediterranean. The *plates* or pieces, of which the shell is composed, are far more strong, thick, and clear, than those of any of the other kinds; and these constitute the sole value of the animal. They are semi-transparent, and beautifully variegated, as you may easily see by looking at your mamma's beautiful comb. There is, however, much trouble in softening, preparing, and polishing the shell.

Elizabeth. Then the shell of this animal is not one solid mass, as I supposed; for you talk of the plates, or pieces?

Miss Angerstein. Oh! no, my love; the shell

of the common land tortoise, and also of the green turtle, is composed of *thirty-eight* pieces ; but I do not know of how many the hawk's-bill turtle's shell may consist ; although, like the *loggerhead* turtle, a species to which it is very nearly allied, the shell may only consist of *fifteen segments*.

Jane. In Enfield's Speaker there is a very amusing fable of the chameleon, and as it belongs to this class, perhaps you will be so good as to tell me about it ; for, in the fable, three people disputed concerning the colour, saying it was *green, blue, and black*, and when the little creature was produced, it was white. Does it change its colour, or is it merely a fabulous account ?

Miss Angerstein. The chameleon is of the lizard tribe, and is a native of India, the Indian islands, Africa, and some of the warmer parts of Spain and Portugal, as well as of several of the countries of South America. Though an extremely ugly and disgusting-looking animal, it is perfectly harmless, feeding only on insects, for which the structure of its tongue is peculiarly adapted, being long and missile ; and by means of this it seizes upon insects with the greatest ease, darting it out, and instantaneously retract-

ing it, with the prey on its glutinous tip, which it swallows whole. The skin is covered with small *warts*, or granulations, each about the size of a tolerably large pin's head. Some authors assert that it takes the colour of whatever object it is near : others, that it is always *green*, though it exhibits all the different shades, but particularly of *three* very distinct ones ; *Saxon green*, *very dark green*, and *blue green*. What is the real colour of the animal, I think it is very probable we shall never know, as almost every traveller gives a different account of it. There is a particular species of the lizard which I must tell you of. Have you ever heard of a salamander ?

Elizabeth. Nurse told us once, that if we could keep a fire in for seven years, a salamander would come in it ; so I thought it was a story to amuse us children, and that there was no such animal.

Miss Angerstein. Of the kind that nurse describes, I may venture to say there is not ; though most ridiculous stories have for ages been circulated, of the little lizard called a salamander ; such as its not only being able to withstand the effects of fire, but even to extinguish this powerful element. In the most raging con-

flagration, it has been stated, if one of these small lizards was but thrown into the flame, its progress would be immediately checked. M. de Maupertuis, a celebrated French philosopher, who minutely studied the nature of the salamander, demonstrated, experimentally, that fire acted upon it in the same manner as upon all other animals.

Jane. I wonder if I can make nurse believe this; for she often tells Fanny, she is as fond of the fire as a salamander. Where is it found?

Miss Angerstein. In many parts of Germany, Italy, and France; and the usual places of its retreat, are shady woods, high mountains, or the banks of unfrequented rivulets; and it is not often seen except during wet weather. In the winter, it lies concealed in hollows about the roots of old trees, in subterraneous recesses, or the cavities of old walls, where several of them have been sometimes discovered, collected together. It is extremely tenacious of life, and is not to be killed by blows or wounds, without much difficulty; but if wetted with vinegar, or sprinkled with powdered salt, it soon dies in convulsions. It feeds principally upon insects, snails, and worms.

Elizabeth. How very singular it is that such unlikely properties should be attributed to any living thing, but more especially to so insignificant a little animal as the salamander appears to be.

Miss Angerstein. It shows the readiness of the human mind to receive any wonderful stories, while in a state of ignorance. Like all other *marvellous* narrations, it doubtless had its rise in the very early periods of the world; and as it furnished many objects of comparison to poetry, and many brilliant devices to valour, it seems to have agreeably laid hold of the imaginations of men, in such a manner that they were unwilling to retract their belief, and therefore contented themselves with the traditions of the ancients, who called it the daughter of fire, without having their curiosity sufficiently roused to satisfy themselves by immediate experiment. But when the light of science was once diffused abroad, and the dark mists of ignorance and superstition began to be dispersed, then the world began to discredit this wonderful property; and experiment proved, what reason alone might, long before, have demonstrated.

Jane. Now then we must think a little of the

second order ; for I dare say you will have many curious things to tell us of the serpent tribe, disgusting and venomous as they are. I did not expect to be so much interested in reptiles as I have been ; but you always select the most amusing things to tell us.

Miss Angerstein. I always try to do so, my love ; for my wish is to render whatever information you may receive in your walks, not a task, but a pleasure ; and I am glad to find I succeed. I have consulted most of the books which treat of the subject of natural history, that your papa's library affords.

Jane. How kind in you, to take so much trouble to please us !

Miss Angerstein. Children, in general, are by no means aware how deeply they are indebted to those who instruct them ; nor how much anxiety a governess feels for their improvement in virtue and knowledge ; nor what sacrifices of personal comfort and time she makes, to attain this desirable end. Nothing can ever repay an instructress for her days of toil, and nights of restless anxiety, but the improvement, the gratitude, the devoted affection of her pupils. Without this return for all her labourss, her employment loses every

charm, and her existence is a state of misery : with it, there is no exertion, within the limits of her health and abilities, which she will not most readily and cheerfully make. As yet, I have had every reason to say, that you, my dear girls, are fully sensible of what you owe to any person who may superintend your education ; and in seeking for such particulars of your favourite study as I think will prove most interesting to you, I never feel it a trouble, but am nearly as much interested in it as you are. As I before told you, serpents have no legs ; and they have neither fins nor ears. In their motion they resemble worms ; but they have *lungs*, of which all worms are destitute. The principal difference in this race of animals is, their malignity or harmlessness.

Elizabeth. I have always thought that snakes, serpents, and *all* such creatures, were venomous, without any exception.

Miss Angerstein. You were greatly mistaken, my love ; for, out of nearly two hundred species of *snakes*, not one-fifth are supposed to be poisonous.

Jane. I always wonder why such dreadfully

dangerous properties were bestowed upon such reptiles.

Miss Angerstein. They are equally the creatures of God, with the superior animals, Jane; and the poison these creatures possess, seems bestowed upon them by the Author of nature, for their preservation. Without it, serpents would, of all other animals, be the most insecure and exposed, destitute as they would then be of the means of defence, as well as flight; and exciting the dislike of the human race, by their disagreeable forms and offensive scent. Fortunately for us in Europe, we are not acquainted with above three or four species which are at all venomous. Yet the mischievous quality of a few is sufficient to make us afraid of the whole; as, to the common observer, it is uncertain by outward appearances, which are, or which are not the venomous species.

Elizabeth. Where are those of the largest size found?

Miss Angerstein. They are found in the greatest numbers in the warm countries, within the tropics; and abound most where the climate is warm, the soil moist, and the land uncultivated.

On the swampy banks of the Niger in Africa, and the Oronooko in America, where the sun darts his fiercest rays, and mankind are thinly dispersed, serpents are said to wind round the branches of trees in amazing numbers, and to carry on an unceasing war with all other animals in their vicinity. The largest animal of the serpent tribe, is the *great boa constrictor*, which is frequently from thirty to forty feet in length, and of a proportionate thickness. It is a native of Africa, India, the larger Indian Islands, and South America. In the island of Java, one of these monsters has been known to kill and devour a *buffalo*!

Jane. A buffalo! How could it possibly kill so large an animal?

Miss Angerstein. It darts unexpectedly upon the affrighted beast, begins instantly to wrap him round with his voluminous twistings, and at every twist, the bones of the buffalo have been heard to crack almost as loud as the report of a gun. It is in vain that the animal struggles and bellows; its enormous enemy entwines it so closely, that in a short time all its bones are broken, and the whole body is reduced to one uniform mass. The

serpent then untwines his folds, in order to swallow its prey at leisure.

Elizabeth. I now fully understand, that it can kill any animal with great ease. But as the skin of the buffalo is remarkably tough, how can it devour it?"

Miss Angerstein. As they never masticate their food, there is no occasion to dismember it. Their mouths are very wide in proportion to the size of their heads, and so constructed, that they can with ease swallow the head of another animal three times as big as their own. The jaws being held together by a muscular skin, and the throat dilating to let the prey pass, there is little difficulty to be overcome in swallowing it; as the first thing which the boa is said to do, after having uncoiled himself from the buffalo, is *to lick* the whole body over, and thus cover it with a mucilaginous substance; it then begins to swallow it at the end that affords the least resistance. As the temperature of their blood is colder than that of other animals, their powers of digestion are consequently slower, though not less effectual; and it sometimes happens, that a part of the devoured victim hangs out at the mouth, while the lower part is dissolving by the action of the stomach, when the other

parts are successively swallowed to undergo the same operation.

Elizabeth. What a disgusting animal it is! I should think it would be very easily destroyed after so hearty a meal.

Miss Angerstein. At such times, they exhibit a lively picture of surfeited gluttony, my dear; and seem torpid, inactive, sluggish beings; and as they are incapable of defence or flight, the naked, unarmed Indian, is not afraid to attack them, and generally proves successful. But it is otherwise when this sleepy interval of digestion is over: they then issue from their retreats, with famished appetites, while every animal of the forest flies before them. But here come Emily and Fanny.

Emily. Are you going to tell us a story to-day? One of your *animal* stories, I mean.

Miss Angerstein. I will tell you about a monstrous serpent, that was killed in Africa. You have all heard of Regulus, the famous Roman general, who was put to death by the Carthaginians in so barbarous a manner.

Fanny. Even I have read about *him*, in Mrs. Trimmer's "Roman History."

Miss Angerstein. Well then, I may proceed

to my story. After landing in Africa with a very large army, nothing but success attended him at first, and he very soon made himself master of most of the considerable places on the sea-coast. As he was one day leading his army along the banks of the river Bagrada, which emptied itself into the sea between Carthage and Utica, an enormous serpent disputed his passage over. Pliny, the celebrated Roman naturalist, says, that it was one hundred and twenty feet long, and that it had swallowed several soldiers; that several were killed by the severe blows it dealt all around with the lower end of its body; and that some were poisoned by the dreadful effluvia it emitted. It caused such universal terror, that Regulus was obliged to employ some of his legions against it, before he could decide which should remain master of the river. But as this serpent was covered with very hard scales, the arrows and darts of the soldiers were of no use; they were therefore obliged to have recourse to their *battering engines*, and to besiege it as they would have done a fortress. The stones thrown from their small engines took no effect on it; but at last, after much trouble and useless labour, a stone of a most extraordinary size, thrown from

their strongest machine, happily struck him with such force, that it broke his spine, and killed this dreadful monster. Regulus sent his skin to Rome, which was hung up in a temple, where it is said to have remained till some years after the Numantian war; and an ovation was decreed to the general for his success.

Jane. How thankful I am that our country does not produce such creatures. It is most extraordinary to hear of its existence. Do you think the account of it is true?

Miss Angerstein. It is impossible for me to assure you that the account of it is absolutely correct in every particular, or that its length, &c. may not have been, in some degree, exaggerated; but I have read that Pliny asserts he himself saw the skin; and as several of the Roman writers mention the fact, and record that an ovation was decreed to Regulus, for having rid the world of such a monster, we may be certain there is some truth in it, as no historian could have invented that part of the story, without being subject to the most shameful detection.

Emily. What is an ovation?

Miss Angerstein. An ovation was a remarkable honour, a sort of *lesser triumph*; and was

given only for some signal exploit, which was not of a nature to deserve a triumph.

Jane. Then I suppose we must believe it, since it is so well attested ; but it is so wonderful as almost to appear incredible.

Miss Angerstein. You may do as you please on that point, my love ; but you must not accustom yourself to disbelieve every thing, because it does not come under your own observation, any more than I would wish you to give credit to every marvellous tale you hear ; but when you have obtained the best evidence of the truth of a circumstance, it argues great presumption to refuse belief, because you have not yourself seen it. It is best to steer the middle path ; neither to believe every thing without examination and enquiry, nor yet to be too incredulous, when, upon reflection, our reason tells us that such things are possible.

Fanny. When I was reading Mrs. Trimmer's History to you, one day, you told me that the *asp*, with which Cleopatra, queen of Egypt, killed herself, was a sort of serpent. It must have been a very small one, or it could not have been hidden in the basket of figs.

Miss Angerstein. I do not know exactly what its size was, my love; but there are two asps preserved in the British Museum, in London, about two feet long, and of a kind of pearl colour. There is a serpent found in Egypt, called the *cerastes*, or *horned viper*, (from its having two small horns on its forehead, not bigger than barley-corns,) which is supposed, by some, to be the asp which Cleopatra employed to terminate her dissipated life by an easy death. The bite of this animal causes almost instantaneous dissolution, without any appearance of poison, but merely as in a gentle sleep. Plutarch says, that she provoked the asp to greater fury, by pricking it with a golden bodkin. This serpent is also mentioned in Lucan's poem of "Pharsalia," where one of Cato's followers is represented to have died by the bite of it, in the deserts of Africa. It is put into a very agreeable English dress, by Rowe; and the lines referring to the effects of this serpent are :

" Bit by an asp, th' unhappy *Lævis* dies,
His blood congeals, thick darkness veils his eyes ;
No sense of pain, no torment did he know,
But sunk in slumbers to the shades below."

But we must now make haste and prepare for breakfast, as we are at home, and the bell will very soon ring. Another day we must not chat so long, but finish our walk a little earlier. Let me see how quick you will all be this morning.

CHAP. VII.

MISS ANGERSTEIN expecting letters from her friends in England, and having been disappointed of them for some weeks, was so anxious to know what this day might produce, that, as the weather was cool, with a fine fresh air blowing from Loch Beauley, she determined to change the usual walk, and go to Jenny Macrea's, where the letters were usually left, by a man with a horse, who conveyed from Inverness such as were destined for the inhabitants of that lovely valley, the Aird, as well as for the town of Beauley and its neighbourhood. As soon, therefore, as they had visited the cow-house, and had sent Roderick with the usual quantity of milk to Martha Pierce, (who was now quite recovered, and looking nearly as well as the other little Highland girls in that healthy spot,) Miss Angerstein said, "We will walk to the post-house, my dears, and see if there are any English letters; for, by the time we reach there, I should think the bag would be

arrived ; and should we be too early, we can but continue our walk till we come to Lentrum, where we can sit down on the wall, and wait till the man comes up.

Emily. Then I can see the little baby ; and if you will allow me to run in and fetch it, I can give Emilius the cake I have got for him.

Mrs Angerstein gave the required permission, and the whole party seemed highly pleased at the idea of seeing Jeanie Macrea and her baby. Jeanie had been nursery-servant to Mrs. M'Ivor, for many years ; and when she married Donald Macrea, and was settled in the solitary dwelling by the road-side, which was denominated the *post-house*, Emily was an engaging little prattler of three years old, whom Jeanie had nursed from her birth, and of whom she was doatingly fond. When her eldest child was born, Jeanie regretted its being a boy, because she could not call it Emily ; but that being impossible, it was named Alexander, as a necessary compliment to the family in which she had lived so long, and to which she was attached with a warmth seldom found, but where the manners are as simple and uncorrupted as in the Highlands of Scotland. She had two more boys, and Jeanie began to

despair of ever being able to give Miss Emily a namesake; and her regret having been often talked of in the family, as well as most energetically enlarged upon by herself, by that most expressive of all ejaculations in the mouth of a Highlander, "Och hone!" Mr. M'Ivor, or *Inch Cairn*, as he was always called in Scotland, (it being the custom there to distinguish the gentlemen of the family by the names of their estates, and the poor people by their Christian names, with an occasional epithet alluding to some accidental circumstance; as, Roderick *Dhu*, or *black* Roderick; and *Rory Roy*, or *red* Rory, from the colour of their hair,) jokingly told her she had better call her third son *Emilius*, as that was the only remedy he could recommend. Jeanie and her husband were highly delighted with the laird's suggestion, and the baby was accordingly christened by that name; which, in a very little while, was curtailed into *Millius*, and in process of time into *Mill*. But before this happened, Jeanie's family received the joyful addition of a little girl, who was pronounced to be, by her delighted mother, "the very image of her sweet Miss Emily! with her pretty blue eyes, and fair skin."

Elizabeth does not fall into the same errors as you do ?”

Jane answered very cheerfully, though blushing very deeply, and said she should be extremely glad to know.

Miss Angerstein. Because she is more desirous of pleasing and obliging others, than of gratifying her own wishes. With Elizabeth, *self* is the last person thought of. She has learnt, understands, and generally practises, the golden rule which our Blessed Saviour left us, and which Dr. Watts has versified :

“ Be you to others kind and true,
As you'd have others be to you ;
And neither do nor say to men
Whate'er you would not take again.”

She is constantly attentive to the feelings of those about her ; and by a little *self-denial* and *consideration* it is, that she avoids the *blunders* you were speaking of. It is equally in your power, as in hers, to be so fortunate ; and, as a proof of it, you have only to compare what *you now* are with what *you once* were. I am happy to tell you, my dear Jane, that you have made rapid advances since I first knew you ; and if you

continue as you have begun, you will, in a short time, completely conquer that *love of self*, which made you so unamiable, and which, I think, arose as much from *thoughtlessness*, as any other cause. You will, I know, think of what I have just said; therefore we will choose a more agreeable subject of conversation. And to reward Elizabeth for her kind consideration, as well as to set a good example to you, my little girl, I am quite ready to give you what information I possess concerning *Pieces*, or *Fishes*, which, as you remarked, is the fourth Class, and which contains six Orders.

Jane. But much as I wish to know what you are so kind as to offer to tell us, I assure you, ma'am, I had rather you would defer it till another time, and allow us to converse on some other subject; as, through my thoughtlessness, you will be induced to exert yourself, when, as Elizabeth very properly said, you might not be sufficiently at ease to do so with any comfort to yourself. And I do now sincerely intend to profit from what you have said about Elizabeth; but must make no rash promises, as I so often break them. Therefore, let me begin this morning; and when you have got your letters, we shall then

Miss Angerstein and her pupils often called to see this worthy woman and her children, and had promised that, if Mrs. M'Ivor did not object to it, Emily should be present when the little girl was christened, which Jeanie considered as the greatest honour that could be conferred upon her and her child; and Emily looked forward with much eagerness, for the day when she was to have a little namesake. The ceremony of baptism in the Scotch church, does not allow of *Godfathers* or *Godmothers*, but makes the parents alone answerable for the proper instruction of the child; therefore Emily was not called upon to fill the responsible office of *Godmother*, to which her tender age would have proved an insuperable objection in Miss Angerstein's opinion; but merely to be present at the ceremony of christening her little namesake, who was likely to become an object of great interest to her and her sisters. They were therefore much pleased at having the opportunity of visiting *Bogroy*, as the post-house was called, and set out on their walk in high spirits. For some time they could talk of nothing but the baby, and the various articles of dress which they were all most busily employed in

making for it ; but at last the two young ones began to frolic and run about, when the conversation very soon turned upon the usual subject, by Jane's observing, " We are to talk about the Fourth Class, *Pisces*, or Fishes, to-day. Elizabeth and I have entered in our books the heads of what you told us concerning *amphibious animals* ; and as we derived so much amusement from that unpromising class, we have great hopes that fishes will prove even more interesting."

Elizabeth. But I know Miss Angerstein is so anxious about her letters, that it will be a greater exertion to her than it usually is, to answer all our questions ; so, Jane, I think we had better not trouble her this morning, but amuse ourselves with other things. I wish you had not mentioned it.

Jane. I am sorry I said any thing about it ; but she seems just as cheerful as she always is, so I quite forgot she had any cause of anxiety. I am constantly making these sorts of blunders, Elizabeth ; while you are more fortunate, and keep quite free from them. I cannot tell how this is.

" Shall I tell you, Jane," said Miss Angerstein, in her usual kind manner ; " shall I tell you *why*

all of us enjoy our conversation so much the more.

Miss Angerstein. I applaud your prudence, Jane, in not making any promises ; and I am pleased to see that you are sensible how much more estimable you will be, when you have learned to control your own will, and to consider *others* before yourself. I know the effort will cost you some trouble ; but you will be amply repaid, my love, in the inward satisfaction you will feel. You must not be disheartened because you occasionally relapse, but only use double diligence to guard against the fault ; and in a little while you will gain the habit of *self-command*, which will be of infinite service to you through life. Exertion is not only absolutely *necessary* to every body, but brings its own reward. By exerting myself during the last week, in attending to you and your sisters, I have frequently forgotten the cause of my anxiety, and my mind has been comparatively easy ; when, had I indulged in idleness, or given way to the suspense which the protracted silence of my friends has occasioned, I should, undoubtedly, have felt much more uneasy, and my health would have suffered. I shall, therefore, be better pleased to

pursue our usual theme of discourse, than to continue our walk in silence. Have you any idea what part of a fish is selected by naturalists to characterize the orders ?

Elizabeth. Not the slightest ; for I know so very little of fish, that I should never guess what can have been fixed upon : they are all so very much alike.

Jane. No, Elizabeth, they are very different in shape and size, and also in colour ; because, even you know a herring from a cod or a salmon, I am sure. At any rate, I do. But I dare say there is something else, of more importance than *size*, *shape*, and *colour*, to determine this point. Is it by their having teeth, or being without them, as in Mammalia ?

Miss Angerstein. No, my love. Fishes are chiefly distinguished by their *fins*, of which there are five sorts : 1st. the dorsal, or back-fin ; 2nd. the pectoral, or breast-fins ; 3rd. the ventral, or belly-fins ; 4th. the anal, or vent-fin ; and 5th. the caudal, or tail-fin.

Elizabeth. I fear we shall find this class more difficult to understand than the former ones, there being so many characteristic marks to remember.

Miss Angerstein. I do not think you will, Elizabeth; as it is from the situation, and the presence or absence of the *ventral fins*, alone, that the orders are characterized. These fins are considered by Linnæus as analagous to feet in quadrupeds: they are placed towards the lower part of the body, and are always extended flat on the water, in all situations; as they serve to raise or depress the body of the animal, rather than assist its progress.

Jane. How many fins have fish in general?

Miss Angerstein. The usual number is *two pair*, and *three* single fins; though some fish possess more, and many less than this number.

Elizabeth. Where are the five sorts of fins placed, which you mentioned?

Miss Angerstein. The dorsal fin is situated along the ridge of the back, and serves to keep the fish in equilibrium, and also very greatly assists its velocity. The pectoral, or breast-fins, are placed at some distance behind the opening of the gills: they are generally strong and large, answering the same purpose to a fish, as wings do to a bird in the air; that is, pushing the body forward, like the oars of a boat. They also serve to balance the body of the fish, and prevent its

head from sinking, which it would otherwise do. The situation and use of the *ventral fins*, I have just explained to you. The *anal fin* reaches the tail, and serves to keep the body of the animal upright, or in a vertical direction. The *caudal*, or tail-fin, is the grand instrument of motion, its muscular force being astonishingly great: it gives the fish the most assistance in its progress, the other fins being quite subservient to it, by merely giving the body its proper direction, or keeping it so. By means of these different fins, fish have the most rapid motions, and perform voyages of upwards of a thousand leagues in one season.

Jane. You mentioned the gills of a fish: what are they?

Miss Angerstein. They are organs placed on each side of the neck, by means of which fish breathe. In doing this, they fill their mouth with water, then throw it back with so much violence as to lift the great flap, or valve, which covers the gills, and force it out behind. In the passage of the water, among the feather-like parts of the gills, all, or at least the greatest part of the air contained in it, is left behind, and carried into the body, to perform its part for the support of the

animal ; but the method by which the fish separates the air from the water, in inspiration, has never yet been discovered.

Elizabeth. Perhaps they do not require *air* for the support of their existence, like land animals ; but are furnished by the great Creator with some other faculty, which is at present unknown to naturalists.

Miss Angerstein. Naturalists assert, that air is as necessary to fish, as to all the other parts of animated nature ; for *whales* are obliged to rise to the surface of the water every two or three minutes, for a fresh inspiration ; and even those fish which live entirely under water, require a constant supply of air, otherwise they would soon expire. This is the reason why, in winter, when a fish-pond is entirely frozen over, it is necessary to break holes in the ice ; not that the fish may come to feed, but that they may come to breathe. Without this precaution is taken, the fish inevitably die.

Elizabeth. That, certainly, is a most convincing proof how necessary air is to their existence ; so that my bright idea of an unknown sense or faculty, is soon overthrown. What slimy, slippery things fish are !

Miss Angerstein. Yes, my love; all fish are furnished with a slimy, glutinous matter, which overspreads the whole body, and defends them from the corrosive quality of the water. Beneath this matter, most of them have a strong covering of scales, which, like a coat of armour, protects the body from external injuries; and under which there is an oily substance, which supplies the animal with the necessary warmth and vigour.

Jane. Fish, as well as birds, migrate. Do they not, ma'am?

Miss Angerstein. They do, Jane; either to avoid the larger fish, *their* pursuers, or to pursue the smaller fish for food; or to find a more congenial place to deposit their spawns, or eggs. Though inhabiting the water, they are averse to extreme cold. In the summer season, they frequent the shallows near the shore, where the sun has power to warm the water to the bottom; and in the winter they retire to the greatest depths of the ocean, where the coldness of the atmosphere has not power to penetrate.

Elizabeth. On what do fish in general feed? I should think they could hardly know what *the feeling of hunger* was, from the nature of the element they constantly live in.

Miss Angerstein. Their food is extremely various. Insects, worms, or the spawn of other fish, sustain the smaller tribes, which, in their turn, are pursued by larger foes. Some feed on *mud* and *aquatic* plants; but by far the greater part subsist on animal food alone. Innumerable shoals of one species pursue those of another through vast tracks of the ocean, from the vicinity of the pole, sometimes, even to the equator. In these conflicts, and in this scene of universal rapine, many species must have become extinct, had not the All-wise Creator accurately proportioned their means of escape, their production, and their numbers, to the extent and variety of the dangers to which they are exposed. The smaller species are, consequently, not only more numerous and prolific than the larger, but their instinct impels them to seek food and protection near the shore; where, from the shallowness of the water, many of their foes are unable to pursue them. Your idea of their appetite is exceedingly wrong, as all their senses, *hunger excepted*, are supposed to be less discriminating, and more dull, than those of quadrupeds and birds. The voracity of some of the species is unbounded.

A single pike has been known to devour *a hundred roaches* in the space of *three days*.

"But I have heard people say," observed Jane, "that some sorts of fish never eat, but merely suck in the water."

Miss Angerstein. It is a general opinion that gold-fish require no food, and it is most certain that they will subsist for a long time without any other food than what they can collect from water frequently changed; yet they must draw some support from the animalculæ and other nourishment supplied by the water. That they prefer more substantial diet can easily be proved, since they will greedily seize upon bread-crumbs that that are thrown in to them.

Elizabeth. Where did they originally come from?

"From China," replied Miss Angerstein; "and the most beautiful kinds are caught in a small lake in the province of Chekyang, at the foot of a mountain called Tsyen-king. They were first introduced into England about the year 1691, but were not generally known till thirty years afterwards."

Elizabeth. I suppose they cannot exist in

the open air, in Europe, at least in the northern parts?

"I am not quite certain that I ever saw any in England, in ponds or basins, but I have in Paris: in the gardens of the Tuileries, one beautiful April day, I amused myself for a long time in watching the immense shoals of gold, silver, and tortoise-shell fish, playing on the surface of the water, in a large marble basin, and readily seizing upon the pieces of bread, which many of the crowd collected there, threw in to them. I, however, believe, that they are also to be met with in England, ornamenting the pleasure-grounds of many a noble mansion."

Jane. But we have not yet got the Orders of this Class: are they very numerous?

Miss Angerstein. There are generally reckoned six Orders of Fish, which, as I before told you, are distinguished by the presence, absence, and situation of the *ventral* fins, which fins were considered by Linnæus as answering to the feet of quadrupeds. The first four orders, as you will see by this list, differ from the two last, by having *bony gills*, which the *fifth* and *sixth* Orders have not.

ORDERS OF FISHES.

- 1st. *The Apodes*: those that have *no ventral fins*, (and are so called, as being without feet, from two Greek words,) and *bony gills*; as, eels, the sword-fish.
- 2nd. *Jugulares*: with *bony gills*. These have the *ventral fins* placed *before* the pectoral; as in the cod, the haddock, the whiting.
- 3rd. *Thoracici*: with *bony gills*. This order has the *ventral fins* placed under the pectoral; as, the perch, the mackarel, the sole, the plaice, the flounder, the turbot, and John Dorée.
- 4th. *Abdominales*: with *bony gills*; and the *ventral fins* are *behind* the pectoral; as in the salmon, the trout, the smelt, the pike, the flying-fish, the herring, the sprat, the anchovy, the carp, the tench, the dace, the roach, and the gold-fish.
- 5th. *Branchiostegous*: with *gills destitute of bony rays*; as, the cyclopterus or sucker, and the lump-fish.
- 6th. *Chondropterygious*: with *cartilaginous gills*; as, the shark, the sturgeon, the dog-fish, the torpedo, the skate, the ray, and the lamprey.

"I am much obliged to you," said Elizabeth, "for having named so many fish belonging to each Order; it will be of the greatest use to us, in finding out how the fish are distinguished one from the other. I shall beg Cook to tell us the next time she has any fish to dress for dinner, and then by means of this list we shall the better understand the different fins, when we have compared it with the real fish. Among the *Apodes*, you mentioned the *sword-fish*: what sort of a creature can that be?"

Miss Angerstein. It is a very large and powerful animal, often growing to the length of *twenty* feet and upwards: it derives its name from the *upper jaw*, which is long, hard, and sword-shaped. Their voracity is unbounded, for they attack and destroy almost every living thing that comes in their way: the larger fish it penetrates with its long snout, few of which, when within sight of it, can withstand or avoid its shock. There are but two species known, one of which only is found in the European seas. The sword-fish and the whale are said never to meet without coming to battle, and the sword-fish has the character of being always the aggressor. Sometimes two of them join against one whale; in which

case, the combat is by no means equal. The whale uses its *tail* only in its defence: he dives down into the water, head foremost, and makes such a blow with it, that, if it take effect, finishes the sword-fish at a stroke. But, in general, he is sufficiently adroit to avoid it, and immediately falling upon the whale, buries his weapon in his sides; though he seldom does any great damage to the animal, from not being able to penetrate much beyond the blubber. When the whale perceives the sword-fish darting upon him, he dives to the bottom; but is closely pursued by his antagonist, who compels him again to rise to the surface, when the battle begins afresh, and lasts till the sword-fish loses sight of the whale, which is at length compelled to swim off, to get rid of his tormentor, which his superior agility enables him to do.

Jane. What tremendous creatures they seem to be. Is their strength equal to their size?

“Yes, my dear; for, some years ago, a letter was written to the late Sir Joseph Banks, then president of the Royal Society, from the captain of an East Indiaman, giving an account of the great strength which this fish occasionally exerts: the bottom of his ship being pierced through in

such a manner, that the sword was completely imbedded, or driven through its whole length, and the fish killed by the violence of the effort. A part of the bottom of the vessel, with the sword imbedded in it, is now lodged in the British Museum."

Jane. Its strength must indeed be prodigious; for, of course, the ship was built of oak, which is always spoken of as being nearly as hard as iron. But what do you mean by the British Museum?

Miss Angerstein. The word *museum* denotes a repository of learned and miscellaneous curiosities. The *British Museum* is in Russel-street, Bloomsbury, London, and contains an amazing number of books, drawings, prints, and rarities. The origin of this invaluable treasure was the purchase of Sir Hans Sloane's library, &c. by the public, for the national benefit. But valuable additions are constantly being made to this museum; among which, the late king's library, presented by his present majesty, George the Fourth, must ever hold a distinguished place in the museum: for its reception, a new wing has be added to it, into which, I believe, the books are now removed.

Elizabeth. Then the Museum contains a

variety of things, and must occupy a large mansion. Did you ever see it ?

Miss Angerstein. Yes : the principal building measures two hundred and sixteen feet in length : it was erected by *Peter Paget*, a native of *Marseilles*, and an architect of the first eminence in his time, who was sent over from *Paris*, by *Ralph*, first duke of *Montague*, for the sole purpose of constructing this splendid mansion. The interior was painted by the first masters of the day. The ceilings are all painted by *Charles de la Fosse*, who was reckoned one of the best colourists of the French school ; and whose paintings on the cupola of the Hospital of Invalids, in *Paris*, are very greatly admired. The landscapes and architectural decorations are by *James Rousseau*, whose particular skill in perspective has always been held in high estimation ; and the garlands of flowers are by *Jean Batiste Monnoyer*, the most eminent flower-painter of his time. I cannot now describe to you the varied and unrivalled contents of this great national repository ; but there is one antique vase there, which, from its great celebrity, it is well to be acquainted with. It was formerly called the *Barberini Vase*, from having been for more than two centuries the principal orna-

ment of the *Barberini palace* : it was found, about the middle of the sixteenth century, two miles and a half from Rome, in the road leading to *Frescati*. At the time of its discovery, the vase was enclosed in a marble sarcophagus, within a sepulchral chamber, under the *Monte del Grano*. This vase, which is thought to be one of the most perfect specimens of Greek art, is formed of glass; the figures, which are executed in relief, are of a beautiful opaque white, and the ground is of a dark transparent blue. The subject of these figures has never yet been satisfactorily elucidated; but the sculpture is most truly admirable. It was brought to this country by the late Sir William Hamilton, and purchased of him by the late duchess of Portland, nearly fifty years ago; since which period, it has been more generally known by the name of the *Portland Vase*. It was deposited in the British Museum, by the duke of Portland, in the year 1810; and when I saw it, it was placed in the centre of the ante-room, at the head of the stairs, in a very good, because it was a very conspicuous situation.

Jane. What a place of wonders London must be! How I wish we could all go there for a little while, to see some of the sights! We should

never be tired of such a charming place, should we, Elizabeth?

Indeed, Jane, I am afraid we should; for as we could not always be seeing sights, how much we should miss our garden, and our pleasant walks! I never like to stay in Inverness long; and though London is a larger and more handsome city, still, all towns must be alike in certain points; and when London had lost its novelty, I should long to be at dear Inch Cairn again!"

They now reached *Bogroy*, and were soon welcomed by Jeanie Macrea, who was delighted to see the group of happy faces which now surrounded her. "Ah, my dear Miss Emily!" said the good woman, "how delighted I am to see you! It is a long time since you have been here."

"The weather has been so very warm, Jeanie," replied Miss Angerstein, "that we have not been able to walk so far; but as it gets cooler, you will see us more frequently. How are all your children?"

"Very well, thank you, madam; but the heat makes Millius and the bairn very cross. Millius is so little, that he wants as much nursing as the bairn; so that I have my hands quite full with them both."

"Where is Emilius?" asked Emily: "I have got a cake for him; but I must give it to him myself. And I want to see the baby."

Jeanie soon fetched her four *bairns*, as she called them; but not one could be prevailed on to speak. The eldest boys, Alexander and Hugh, hid their faces in their mother's gown, and she held the other two in her arms. Emily then produced her cake, which induced Emilius to smile; and little Fanny gave one to Alexander, because he was her dear brother's namesake. And as there was no cake for little Hugh, Miss Angerstein gave him a penny, with which he was so delighted, that he left his mother and ventured to look at the ladies.

Miss Angerstein enquired when baby was to be christened. "We were thinking of having it named on Monday," said Jeanie; "and I was coming to the house this afternoon, after Jock had done his work, and could mind the bairns, to tell Miss Emily of it, as you were so kind as to say she might come."

"Mrs. M'Ivor has not the least objection to our plan, Jeanie," said Miss Angerstein; "so that you may expect both Emily and Fanny, if you

will let us know the hour. Nurse shall bring them, as I find she always attends upon these occasions."

Jeanie fixed upon twelve o'clock, if the worthy minister liked that hour; but if he chose any other, she was to let them know. Miss Angerstein then asked if there were any letters for them, but the postman was not yet arrived. In a few minutes, however, the well-known step of his pony was heard, and Jeanie ran out to receive the bag. To the infinite satisfaction all parties, there were some for Miss Angerstein; and one for Elizabeth, from her brother. Miss Angerstein eagerly glanced over hers, and finding that all her friends were well, and that their silence was accounted for by a letter having been lost, which she ought to have received three weeks before, she joined her pupils, who were busily engaged with their brother's letter. She then took leave of Jeanie, promising to call on her again very soon, if the weather would allow them, and set out on their way home.

"Do read Alexander's letter, dear Miss Angerstein," said Elizabeth, after having kindly ascertained that the letters had removed all anxiety from Miss Angerstein's mind: "do pray read

his letter, it is such an amusing one ; and he says he shall be home in about five weeks. How delighted we shall all be, to have him once more with us. And dear grandmamma too, she will be so pleased to hear she will see him so soon, I must tell her directly I get home, and read the letter to her."

The young people were all in such high spirits, with the contents of their brother's letter, that they could talk of nothing else all the way home ; and as soon as they reached Inch Cairn, Elizabeth immediately flew to her grandmamma's room, to know if she was awake, and well enough to receive such an early visitor. The good old lady was so affectionately attached to all her grandchildren, and so fond of having them with her, when able to bear their company, that Elizabeth was certain she would be most welcome, early as it was ; and the intelligence she was the bearer of, would render her visit doubly acceptable. Owing to the utter state of helplessness to which a paralytic stroke had reduced her, Mrs. Inglis never rose till the middle of the day ; and when Elizabeth went into her room as quietly as possible, lest she should disturb her, she found her supported in her bed by pillows, receiving her break-

fast from the hands of her beloved daughter, Mrs. M'Ivor, who regularly waited upon her at all her meals; for, as she very properly observed, it was impossible for any one to feel the same interest in the comfort of the dear invalid as she did, and if she neglected her, it was not in the least likely that the servants would attend to all her little wants and wishes, which could only be known and understood by an attentive observer. And who so proper as her child, to pay those quiet little attentions, which are so grateful in the time of sickness? It was a beautiful lesson on filial affection, which met Elizabeth's eyes on entering the room; for the patient kindness of Mrs. M'Ivor's manner, and the watchful tenderness with which she anticipated her mother's slightest wish, could not fail of making a lasting impression upon her young mind, and of affording an admirable comment upon the fifth commandment, which is but too little attended to at present.

After having judiciously prepared her grand-mamma for the joyful news she had to communicate, Elizabeth gave the letter to her mamma, who read it aloud; and the whole party were equally pleased with the prospect of Alexander's

holidays being so near at hand. The dear old lady was affected even to tears; for if she loved any of her grandchildren more than the rest, Alexander and Elizabeth were the favourites. They were, from age and disposition, more considerate than the others, and would at any time leave their own pleasures with the greatest cheerfulness, to read to, or otherwise amuse her. Alexander was a lively, high-spirited boy; yet with his grand-mamma he was all gentleness, and accommodated himself with the greatest ease to all her little whims and wishes. No wonder, then, that she should tenderly love him; for what endears a young person so much, as that affectionately respectful behaviour due from youth to age; and which Alexander and Elizabeth invariably observed towards their aged and afflicted relative, from principle as well as from affection? Mrs. Inglis looked forward to his holidays with an impatience equalled only by that of his sisters; for in old age, as in youth, the dictates of reason are frequently too feeble to control the impetuosity of our wishes.

Miss Angerstein had retired to her room, to enjoy the fruits of her morning walk; and when

she found that all her dear friends were well, and of course all her anxiety removed, she offered up her fervent but humble thanks, to that most gracious Father, who had hitherto protected and watched over her, and those most dear to her, and had averted the evil she most dreaded, by restoring her beloved sister to a comparatively good state of health. Deprived of her parents for many years, her whole care was centred in two sisters, whose unbounded affection was the comfort and solace of her existence. The fear of being deprived of one of these blessings, had made her feel very uneasy, when week after week passed, and no letter arrived. Mr. and Mrs. M'Ivor, who felt greatly interested in Miss Angerstein, and were most anxious to make her residence with them as happy and comfortable as possible, had pointed out to her the probability of the letter being lost, and had done all in their power to relieve her very natural anxiety. They had also inculcated into their children's minds, the absolute duty of a proper consideration for the feelings of one so continually exerting herself for their benefit: so that, instead of giving double trouble, because they saw she was less able than usual to control them, Miss Angerstein's pupils had be-

haved as well as could be expected from children of their age, which had greatly endeared them to her.

When they all met at breakfast, the joyful expression of every countenance, plainly told the total overthrow of all care and anxiety; and not many minutes elapsed, after they had received the usual parental kiss from their dear father, before he was made acquainted with the good news: and a more happy circle of smiling faces, never met round the table for the cheerful morning meal, than was there assembled.

CHAPTER VIII.

THE following morning, when the little girls were all dressed, and prayers were over, the weather being very inviting, they went to the cow-house, and refreshing themselves with a glass of milk, they put Martha Pierce's share into the little tin can, and began their walk to the burn-side cottage. Every thing was looking most lovely: the innumerable wild flowers which ornamented the hedges, sent forth their sweet perfumes on the pure morning air, and the little birds were carolling their songs from every tree and bush. At a distance was heard the cheerful whistle of the cow-herds, as they tended the cattle; and the busy hum of the bees, as they industriously culled the sweets from flower to flower. Every blade of grass glittered with the sun-beams reflected on the brilliant drops, which the gentle shower of the preceding night had bestowed upon

them, and from which the whole face of nature seemed to have derived new life and vigour.

“How happy I feel this morning!” said little Fanny, as she was bounding about the shrubbery, before crossing the burn: “I feel so very, very happy, I hardly know what to do with myself.” And in the exuberance of her spirits and happy feelings, she kissed Miss Angerstein and her sisters repeatedly; and then, followed by Emily, she ran on to open the gate, which led to the little rustic bridge thrown over the burn. When they arrived there, they amused themselves with throwing stones into the water, to watch the glittering of the sun-beams upon the numerous circles, which they called *fairy rings*. When they had all crossed the bridge, Miss Angerstein could not help stopping to admire the whole scene: in the distance was Loch Beauley, on which the sun shone so brightly, that it looked like a sheet of liquid gold, as a glimpse was here and there caught of it through the trees. The beautiful mountain stream by which they were walking, having run several miles from the spot where it first descended over rocks and great stones, through a chasm, which its wintry torrents had formed, had lost much of its turbulence before it

reached the burn-side cottage, where the channel being stony, though not abrupt, its murmurs were loud, but regular and not unpleasing. Where they then stood it ran over smooth pebbles, its borders were verdant, and its sound equal and musical: a little further on it entered a meadow, rich and flowery, beautiful with luxuriant herbage, and diversified by the windings of this wandering stream, which became here a perfect meander, circling round so often that it seemed inclined to revisit its source.

"I am not surprised at your feeling happy, my little Fanny," said Miss Angerstein, after a few minutes' pause, "for the freshness of the morning, and this beautiful scene, would exhilarate less buoyant spirits than yours. It is a morning to make every one feel happy, who has no serious cause for trouble; and we have all great reason to be thankful to our Heavenly Father, that he has blessed us with health, spirits, and peace of mind, three most invaluable gifts, without which we could not enjoy ourselves as we are now doing."

Elizabeth. I often lament that poor grand-mamma cannot now partake of our enjoyments as she used to do. When I was about Fanny's age,

she constantly took me out with her, and this was her favourite walk ; but since the last attack she had, about eighteen months ago, she has never been able to get out. This must be a most trying thing to her, who was so active.

Miss Angerstein. Undoubtedly it is, my love ; but she has many still greater trials to bear. The melancholy state of helplessness to which she is reduced, and which makes her so wholly dependent upon the kindness and attention of others, would weigh most heavily upon her, did she not, with a true Christian spirit, consider that her present affliction is sent by that all-merciful God, who best knows how to dispose of his creatures ; who knows far better than they do, what is most for their advantage ; who loves them better than they love themselves, and sends no trials but such as may, if rightly used, contribute to their happiness.

Jane. I have often wondered how grand-mamma can be so cheerful, when she suffers so much pain, and has neither pleasure nor enjoyment in any thing, as she used to have. Sometimes she is not able to sit up at all ; sometimes her speech is so affected that we can scarcely understand what she wishes to say ; yet she has

frequently told me, (when I have been wondering at her complaining so little,) that she has the greatest reason to be thankful, for that she is surrounded with blessings!

Miss Angerstein. And is she not, my dear Jane? Heavy as are her afflictions, still she has many and great blessings to enable her to support them. Is not your mamma a most attentive and dutiful daughter, who devotes her whole time to the alleviation of her mother's sufferings? Is there any thing that money can procure, or affection obtain, which your grand-mamma has not? All this she takes into consideration; when she tells you she is surrounded with blessings; for she knows that there are thousands who are suffering equally with herself, who are perhaps in want of the *common necessities* of life, while she enjoys all its *comforts*. She undoubtedly possesses an uncommon share of *fortitude* and *self-control*; for many, who are only slightly indisposed, would complain most heavily of their aches and pains, when, compared to what she suffers, they are mere trifles. Your grand-mamma has a remarkably *firm mind*, which conquers *self*, and makes her feel for *others*: imitate her excellent example,

my dear child, for it will be of the greatest service to you through life.

Jane. I wish I could : she is always so *cheerful*, and so apparently *happy* ; whilst I, who am quite well, am often very *unhappy*.

Miss Angerstein. But your unhappiness is of your own creating : it arises from the impatience of your temper ; and the sooner you conquer this great fault, the less unhappy you will feel. The grand secret of happiness is, to preserve your mind and temper calm and cheerful, under every circumstance. Habituate yourself to look at the bright side of whatever occurs, and guard against a disposition to take offence.

Elizabeth. Jane is so different from what she was some time ago, that I am sure she ought not now to say she is unhappy.

Jane. I do not think I have been so much so lately ; but I used to be very uncomfortable, you were all so cross to me.

Miss Angerstein. I dare say there were faults on all sides, Jane ; but you must have given some cause for their being cross to you, or they would not have been so. Do you think they would ?

Jane. I know I was very much to blame, and

I do intend to take your advice, and imitate dear grand-mamma.

Miss Angerstein. I hope you will, my love. But you must not be satisfied with merely having formed the resolution, you must follow it up by good actions and earnest endeavours; for though to *resolve well* is praiseworthy, and is a promise of virtue, yet to *act well* is meritorious, for it is *virtue itself*. You must not, therefore, be content with idly wishing and resolving, which is but the *shadow*; but you must seize upon the *substance*, by actively performing. We will now change the subject, and talk of something more amusing, perhaps, though not more beneficial. What class are we to discuss this morning?

Elizabeth. The fifth; which in our list is *Insecta*, or Insects.

Jane. From what do insects derive their name?

Miss Angerstein. I am no etymologist, my dear; but I believe I am right in saying, that the Insect division of the Animal World received its name from the individuals of which it is composed, having a separation in the middle of their bodies, by which they are cut, as it were, into two parts: these parts are in general connected by a slender ligament, or hollow thread.

Elizabeth. Oh, yes! Wasps, flies, and bees look as if they might be separated by merely touching them.

Jane. And gnats too ; though they unfortunately abound in such numbers, that there seems no chance of their being so easily destroyed. What can be more unpleasant, than the being kept awake by the ceaseless hum of their droning pipe, and their incessant endeavours to fix themselves on our faces ?

Miss Angerstein. Much as you are inconvenienced by them, Jane, they are still more to be dreaded in many other countries, both warmer and colder than our own. In the neighbourhood of the Crimea, the Russian soldiers are obliged to sleep in sacks, to defend themselves from the mosquitos ; (which are a species of gnat ;) and even this is not a sufficient security, for several of them die in consequence of mortification, produced by the bites of these furious blood-suckers. In Lapland, their numbers are so prodigious, as to be compared to a flight of snow, when the flakes fall thickest ; or to the dust of the earth. The natives cannot take a mouthful of food, or lie down to sleep in their cabins, unless they be fumigated almost to suffocation : in the

air you cannot draw your breath, without having your mouth and nostrils filled with them. It is related by Theodoritus, a Greek ecclesiastical historian, that Sapor, king of Persia, was compelled to raise the siege of *Nisibis*, (a town in Mesopotamia, built on the river Tigris,) by a plague of gnats, which attacking the elephants and beasts of burden, caused the rout of his army.

Jane. I hope I shall never go into any of those countries; for, as I find them so disagreeable here, I am afraid I should be eaten up there.

Miss Angerstein. Indeed, my dear Jane, we who inhabit these happy islands, ought to be thankful to that kind Providence which has distinguished us from the less favoured nations of the globe, by what may be deemed an immunity from this tormenting tribe; for the inroads they make on our comfort, when contrasted with what so many other people of every climate suffer from them, are mere nothings; and especially when we further reflect, that it is *His mercy*, and not *our merits*, which has induced him thus to overwhelm us with blessings.

Elizabeth. But before we talk any more of their noxious properties, I am very desirous of

knowing what has been fixed upon to distinguish this class into Orders, and how many Orders there are.

Miss Angerstein. I think, Elizabeth, you are quite right: it is certainly most correct to know how they are distinguished in the first place, and afterwards to enquire into their properties. I will therefore tell you, that they are separated by Linnæus into *seven* Orders, arranged from the *number* and *substance* of their wings, or from the circumstance of their being entirely destitute of wings. The names of the Orders are each derived from two Greek words; but as neither you nor I understand that language, we must be contented with knowing that such is actually the case.

Jane. Then I am afraid they will be so difficult to learn and to remember, that we shall never fix them in our memories as they ought to be.

Miss Angerstein. Do not alarm yourself, my little girl; they are not more difficult than what you have before committed to memory, without finding any very great trouble in so doing; yet they, as well as most terms made use of in Natural History, were derived either from the Greek or Latin languages. But here is the list of the seven Orders, so you may judge for yourself.

ORDERS OF INSECTS.

- 1st. *Coleoptera*. The insects of this Order have *four* wings: the upper ones, which are *crustaceous*, are only cases or coverings to the true wings, which are more delicate than the finest gauze; such as beetles, earwigs, lady-birds, cock-chafers, glow-worms, Spanish-fly, &c. &c.
- 2nd. *Hemiptera*, are insects which have their upper wings half crustaceous, and half membranaceous; such as the grasshopper, locust, cricket, bug, cock-roach, frog-hopper, cochineal, &c. &c.
- 3rd. *Lepidoptera*: containing those having four wings covered with fine scales, apparently like powder or meal; as, butterflies and moths.
- 4th. *Neuroptera*: having four membranaceous, transparent, naked wings. The insects of this Order have no stings; as, the dragon-fly, ephemera, ant-lion, &c.
- 5th. *Hymenoptera*. This Order contains such insects as have four naked membranaceous wings, and have stings; as, bees, wasps, ants, the ichneumon, &c. &c.
- 6th. *Diptera*. These have only two wings, each

furnished, at its base, with a *poise* or *balancer*; as flies, gnats, &c.

7th. *Aptera*, contains all such insects as have no wings: such as spiders, fleas, mites, centipedes, scorpions, crabs, lobsters, prawns, shrimps, craw-fish, &c. &c.

Jane. I shall be able to learn these very easily; but what do you mean by having *crustaceous* wings?

Miss Angerstein. In beetles and insects of the *two* first orders, it means that the wings are composed of a *horny* substance; but I believe the real meaning of the word is, that the covering is *shelly*, and consisting of many pieces of a *soft* texture; such as the shells of lobsters. *Testaceous*, (which we shall have occasion to mention, when we come to speak of the last Class of animated nature) also signifies *shelly*, but of a *hard* texture. All these little peculiarities you should enter in your book, as well as the list of Orders; for then you will have it in your power to refresh your memory, when it proves treacherous; which is of the greatest advantage to every body, but particularly to all young people, whose exuberant spirits some-

times drive such things out of their heads, because they do not so clearly attend to them.

Jane. I have always, since you first recommended it; and when we have gone through all the classes, I mean to ask you to have the goodness to look it over, and correct some of the most glaring faults. Then it will be a nice book of reference for me, when I unfortunately forget any thing you have told us. But the Order to which my torments *the gnats* belong, you say, is furnished with a *poise* or balancer, under each wing. You cannot think how surprised I am; for though I have seen flies and gnats almost every day of my life, yet I have never found them out.

Miss Angerstein. That I can very easily believe, Jane; nevertheless it is very true, that those insects which have only two wings, are furnished with two little balls called balances, one placed under the hinder part of each wing, and which serve to keep the body steady, and counteract the effect of the air. If one were cut off, the insect would soon fall to the ground, and be unable to raise itself again; but if both were removed, it would still be able to fly, but would be carried away by every breeze of wind.

Elizabeth. How exceedingly curious! I wish we could catch a fly, and see this: it would be a great gratification to me.

Miss Angerstein. I shall have much pleasure in showing you this, and many other things equally interesting, when we are at leisure; as I have a small but excellent microscope, which will be of great use to us.

Jane. How delighted we shall be! Are insects long lived, or not?

Miss Angerstein. The lives of insects are very various: the whole period of the existence of some of them is completed in a few hours; others live a summer's day, coming into existence, and leaving it with the diurnal progress of the sun; many live a few days or weeks; more throughout the summer season; and a few are permitted to see *one* or more returns of the seasons. Most of these remain in a dormant state during the winter; but others, which are active in that cold season, lay up a store of provisions against it; as the bee, the ant, &c.

Jane. Yesterday, when I was talking to papa, he said he thought the *feet* of insects were as wonderful as any part of their bodies; but I was

called to bed before he had time to tell me why he thought so. Will you tell me?

Miss Angerstein. From their being so admirably calculated to assist the insect in walking upon the various surfaces they frequent: for instance, such insects as live altogether in the water, have their feet long, flat, and somewhat hairy at the edge, well adapted to aid their motions on that element; such as have occasion to burrow in the earth, have their legs broad, sharp-edged, and serrated. Some are furnished with sharp, hooked claws, by which they are enabled to walk on glass and other smooth surfaces, even with their backs downwards; as in various species of flies: others have something like sponge under their feet, that answers the same purpose. The hind-legs of such insects as leap, have the thigh peculiarly large and strong; and the spider has each foot armed with a kind of comb, probably for the purpose of separating the *six* threads that issue from the orifices in its body, and preventing them from tangling.

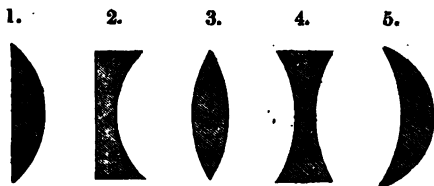
Jane. I am not surprised at papa's saying their feet were wonderful. But will you tell us about their *eyes*, how many they have?

Miss Angerstein. The number of eyes is very

different in different insects : some have only one ; others have two ; spiders have generally eight, and flies many more. The eyes of insects are differently formed from those of other creatures, consisting of a transparent, crustaceous set of lenses, so hard as to require no covering to protect them. These, like *multiplying glasses*, have innumerable surfaces, on every one of which the objects are distinctly formed. Other creatures are obliged to turn their eyes ; but insects have always some or other of these lenses directed towards objects, from whatever quarter they may present themselves ; as you may very easily imagine, when I tell you, that it has been computed there are 14,000 of these lenses in the *two eyes* of a drone ; and in *each eye* of the dragon-fly 12,544 have been reckoned.

Elizabeth. I do not rightly understand what is meant by a *lens*. Will you be kind enough to explain what it is ?

Miss Angerstein. A *lens* generally means a *glass*, ground into such a form as to collect or disperse the rays of light which pass through it, and is of various shapes : I believe I may venture to say *five*. I will just draw them for you on the back of this letter.



1. Plano-convex lens : one side flat, the other convex.
2. Plano-concave lens : one side flat, the other concave.
3. Double convex lens : both sides convex.
4. Double concave lens : both sides concave.
5. A meniscus : *concave* on one side, *convex* on the other, like a watch-glass.

Do you now understand what a *lens* is?

Elizabeth. Very clearly : grand-mamma's spectacle-glasses are lenses ; but I never observed whether they were *convex* or *concave*.

Miss Angerstein. They are *convex*, my love.

Jane. Are spectacle-glasses always *convex*?

Miss Angerstein. No, Jane : for old people they are generally *convex*, because their eyes have become flat with age ; but for young people, whose eyes are round and globular, and who are very *near-sighted*, *concave* glasses are used.

Jane. Then the eyes of these little creatures

are not *single*, like ours; but contain *many* in *one*. Do I understand you rightly?

Miss Angerstein. Perfectly so, my dear. But I have not yet told you of the *metamorphoses* which insects undergo; though, as we are in sight of the cottage, we must wait till we have paid our visit there, when I will explain to you what I mean by that *hard word*, as Emily would call it.

They were met at the door by little Martha, who was quite recovered from the state of debility in which her long illness had left her, and could now run and jump, as well as even Emily and Fanny. "Is your mother at home, Martha?" said Miss Angerstein.

"Oh, yes, ma'am; but she did not hear you coming, or she would have been out to you. Please to walk in and sit down, for it is very warm this morning."

"Thank you, Martha; as I want to speak to your mother, I must go in this morning."

Miss Angerstein and her two elder pupils then went into the cottage, while the two young ones, who were very fond of Martha, gambolled about in the little garden, which, contrary to the usual

custom in the Highlands, was very neatly kept, and instead of being a *mere* *kale-yard*, was adorned with a variety of common flowers, as well as abundantly supplied with that indispensable vegetable. Mr. M'Ivor, who wished to encourage all the cotters on his estate to attend more to the comfort and neatness of their little dwellings, had ordered his gardener to supply any who would be at the pains of rearing them, with such common seeds as suited the soil and climate. Many had gladly availed themselves of this kindness, and to such as showed any fondness for flowers, some of the *monthly blowing roses* had been given; so that a few cottages on the Inch Cairn estate, would have rivalled those of their southern neighbours in picturesque beauty. Such was Jane Pierce's: she, though a poor widow with several children, was a tidy and hard-working woman, who kept her cottage in a state of cleanliness hardly known among her neighbours; and having been noticed on this account by the laird's family, was not a little proud when any of them honoured her with a visit, which had constantly happened since Martha's illness; and she came curtsying out this morning, as soon as she heard the joyous voices of the happy party.

"I hope Madam and all the family are well," said the good woman, as soon as she had given chairs to her three visitors. "Will not the sweet bairns come in and rest themselves, after their warm walk? I fear they will be tired." So saying, she took two wooden stools into the garden, and persuaded Emily and Fanny to sit down in the shade, after which she returned into the cottage.

"I am sent by Mrs. M'Ivor," said Miss Angerstein, "to tell you, that if you think Martha is now well enough to go to school, you had better send her at once; and that you need not trouble yourself about her dinner, as she desires she will always come to Inch Cairn, when morning school is over, where she shall have a slice of meat with the early dinner, which will be of more service to her than any thing else, and strengthen her against winter."

"I do not know how to thank Madam for all her kindness to me and my child," said the poor woman, taking up the corner of a *clean* apron to wipe her eyes, which were filled with tears. "She has saved my child's life, by the good food she has given her, and I do not know how to thank her; but God, who gave her the power and

the will to do good, will bless her for all she has done to the fatherless and the widow. Please to give my duty to her, and say how gladly I will send Martha to the school; for she is quite well, as I may say, and will do much better there than at home."

"If she is strong enough to bear the daily exercise, said Miss Angerstein, "I think you will do well to send her; as, independently of the instruction she will obtain, she will also get a good dinner. Besides, she must call and have her milk, when she passes in the morning, which will refresh her after her walk; for we shall not be able to bring it her, as the mornings get damp in the autumn, and we shall not then walk so early."

"All I mind," said the anxious mother, "is the rainy weather: I shall be afraid of her catching cold."

While Miss Angerstein had been talking to the widow, Elizabeth and Jane had been holding a little consultation together, the result of which they imparted to their kind instructress, who greatly approved of their intentions, which Elizabeth immediately communicated to the poor woman.

"I do not think," said Elizabeth, "that Martha has a plaid of any kind, to wrap round her in wet weather. Has she, Jane?"

"No, Miss, indeed she has not; for it is as much as I can do to find her in *every-day gear*, without thinking of such niceties. But now that she is so poorly a thing, I must try, before winter, if I can buy her one."

"My sister and I have settled with Miss Angerstein, that we will give her either a paid or a cloak, to save her from the rain and cold; so that you may make yourself easy about that."

"How good you are, my young lady: may God bless you for it. And he will, I am sure, for you are growing up just like Madam."

These points being arranged, and it being settled that Martha should attend school on the following Monday, they all took leave of Jane and her children, and began their walk home.

"Now then," said Emily, "I hope we shall have the explanation of the *hard word*; for Fanny and I were close to you when you mentioned it, but I could not rightly understand what you said. May I ask what it was?"

“ The word was *metamorphosis*, and the meaning of it is ‘ *transformation*, or the *change of shape* ;’ and the various changes which insects undergo, are called *metamorphoses*, or *transformations*, because those terms are expressive of the *sudden* changes to which all the insect race are subject. All insects pass through four states They are usually oviparous, or proceed,

1st. From the *egg*.

2nd. Into the *larva*, or *caterpillar* state.

3rd. Into the *pupa*, or *chrysalis*, which is usually a state of torpor. And,

4th. Into the *imago*, or perfect insect.

Fanny. Then our beautiful butterflies were once dirty, crawling caterpillars !

Miss Angerstein. They were undoubtedly caterpillars, my love ; but why speak of them with such disgust ?

Fanny. I cannot bear to see them, because Kate told me they would hurt me.

Miss Angerstein. That was a mistake of Kate’s, my dear : they are all perfectly harmless, except one or two kinds of the *hairy caterpillars*, which are said to eject a venom from their hair, which blisters the skin. But even of this I am not quite certain : and many of the species are very beautifully coloured and marked.

Elizabeth. Will you not explain to us the different stages of the existence of an insect ?

Miss Angerstein. Of the egg, or first state, I need say nothing, except that it is always laid by the parent insect, in the exact spot where, when hatched, the larva can have access to such food as is suitable for it. The dragon-fly is an inhabitant of the air, as you all know, and could not exist in water ; yet in this element, which is alone adapted for her young, she always carefully drops her eggs.

Elizabeth. Then that accounts for the numbers which are always seen by the water-side.

Miss Angerstein. Certainly, my dear. In the second state, insects are soft, without wings, and in shape usually like worms. This state Linnæus called the *larva* state, and an insect when in it, a larva, which is a Latin word signifying a *mask* ; because he considered the real insect, while under this form, to be *masked*, or concealed. In the English language, we have no common term that applies to the second state of all insects, though we have several for that of different tribes. Thus we call the coloured and often hairy larvæ of butterflies and moths, *caterpillars* ; the white and more compact larvæ of flies, beetles, &c. *grubs* or

maggots ; and the larvæ of many other insects, *worms*. In this period of their life, during which they eat voraciously, and cast their skin several times, insects live a longer or a shorter period; some only a few days or weeks, others several months or years. They then cease eating; fix themselves in a secure place; their skin separates once more, and discloses an oblong body, and they then attain the third state of their existence. From the swathed appearance of most insects in this state, Linnæus has called them pupæ, because they are miniature resemblances of children bound up in swaddling clothes, as infants used formerly to be. In this state, most insects eat no food, are incapable of locomotion, and, if opened, seem to be filled with a watery fluid, in which no distinct organs can be traced. Externally, however, the shape of the pupæ of different tribes varies considerably. Butterflies, moths, and some of the two-winged tribe, are, in their pupa state, enclosed in a case of a horny consistence: as these pupæ are often tinged of a *gold* colour, they were called from this circumstance, *chrysalides* by the Greeks, and *aureliæ* by the Romans, both of which terms are now used by us; as well as *nymphæ*, which name was given by Aristotle to

the pupæ of the beetle and bee tribes. When the enclosed insect becomes matured in all its parts, it bursts the case which enclosed it, quits the pupa, and enters into the fourth and last state. It is now called by Linnæus an *imago*; because, having laid aside its *mask*, and cast off its *swaddling bands*, being now no longer disguised or confined, or in any respect imperfect, it is become a true representative, or *image*, of its species.

Jane. I really think I was never so much interested before, in any thing you have told us; and I now understand why Mr. Fraser made some allusion to a butterfly, when he was once preaching a sermon upon the resurrection of the body.

Miss Angerstein. There is a very striking resemblance between the different states of insects, and those of the *body* of man; yet it is much more complete with respect to his *soul*. He first appears in this frail body, a child of the earth, a crawling worm, his soul being in a course of training and preparation for a more perfect and glorious existence. Its course being finished, it casts off the earthy body, and goes into a hidden state of being, where it rests from its works, and

is prepared for its last state. The time for this being arrived, it comes forth clothed with a glorious body ; not like its former, though springing from it, and endowed with augmented powers, faculties, and privileges, to enable it to enjoy its new and happy state. So it is with the butterfly, the representative of the soul, which is prepared in the *larva*, for its state of repose in the pupa ; and at length, when it assumes the imago, breaks forth with new powers and beauty, to its final glory. If you are not tired of this subject, I will repeat to you a beautiful little poem, which I met with in *Kirby and Spence's Introduction to Entomology* ; an inestimable work, from which I have derived much interesting information, and the greatest pleasure.

The little girls all expressed a wish to hear it, and their kind instructress immediately repeated

THE BUTTERFLY'S BIRTH-DAY.

The shades of night were scarcely fled ;
The air was mild, the winds were still ;
And slow the slanting sun-beams spread
O'er wood and lawn, o'er heath and hill.

From fleecy clouds of pearly hue
Had dropt a short but balmy shower,
That hung like gems of morning dew,
On every tree and every flower.

And from the blackbird's mellow throat,
Was pour'd so loud and long a swell,
As echo'd, with responsive note,
From mountain side and shadowy dell.

When bursting forth to life and light,
The offspring of enraptured May,
The *Butterfly*, on pinions bright,
Launch'd in full splendour on the day.

Unconscious of a mother's care,
No infant wretchedness she knew ;
But as she felt the vernal air,
At once to full perfection grew.

Her slender form, ethereal light,
Her velvet textured wings unfold ;
With all the rainbow colours bright,
And dropt with spots of burnish'd gold.

Trembling with joy awhile she stood,
And felt the sun's enlivening ray ;
Drank from the skies the vital flood,
And wonder'd at her plumage gay !

And balanced oft her broider'd wings,
Through fields of air prepared to sail;
Then on her vent'rous journey springs,
And floats along the rising gale.

Go, child of pleasure, range the fields,
Taste all the joys that spring can give,
Partake what bounteous summer yields,
And live while yet 'tis thine to live.

Go sip the rose's fragrant dew,
The lily's honey'd cup explore,
From flower to flower the search renew,
And rifle all the woodbine's store.

And let me trace thy vagrant flight,
Thy moment too of short repose,
And mark thee then with fresh delight,
Thy golden pinions ope and close.

But hark! whilst thus I musing stand,
Pours on the gale an airy note;
And breathing from a viewless band,
Soft silvery tones around me float.

They cease! but still a voice I hear,
A whisper'd voice of hope and joy,
"Thy hour of rest approaches near,
Prepare thee, mortal! thou must die!"

- “ Yet start not ! on thy closing eyes
Another day shall still unfold,
A sun of milder radiance rise,
A happier age of joys untold.
- “ Shall the poor worm that shocks thy sight,
The humblest form in nature’s train,
Thus rise in new-born lustre bright,
And yet the emblem teach in vain?
- “ Ah! where were once her golden eyes,
Her glittering wings of purple pride?
Conceal’d beneath a rude disguise,
A shapeless mass to earth allied.
- “ Like thee, the hapless reptile lived,
Like thee he toil’d, like thee he spun,
Like thine, his closing hour arrived,
His labour ceased, his web was done.
- “ And shalt thou, number’d with the dead,
No happier state of being know?
And shall no future morrow shed
On thee a beam of brighter glow?
- “ Is this the bound of power divine,
To animate an insect frame?
Or shall not he who moulded thine,
Wake at his will the vital flame?

“ Go, mortal ! in thy reptile state,
Enough to know to thee is given ;
Go, and the joyful truth relate ;
Frail child of earth ! high heir of heaven.”

Elizabeth. What a beautiful poem ! If you have it written out, will you allow me to learn it ? I am so very fond of poetry, that I have great pleasure in committing it to memory ; and this is so interesting, that I very greatly admire it.

Miss Angerstein. I will lend it you, my love ; for I have it in my common-place book.

Emily. Now, dear Miss Angerstein, do be so good as to tell us some stories of insects, as you have done about all the other classes ; and I dare say you remember something just now. I am as fond of stories as Elizabeth is of poetry.

Miss Angerstein. I can give you a description of the very curious manner in which some wild bees construct their nests. There is one species called the *mason-bee*, from their houses being built solely of *artificial stone*. The first step of the mother-bee, is to fix upon a proper situation for the future mansion of her offspring. For this, she usually selects an angle, sheltered by any projection, on the south-side of a stone-wall.

Her next care is to provide materials for the structure: the chief of these is sand, which she carefully selects, grain by grain, from such as contains some mixture of earth. These grains she glues together with her viscid saliva, into masses about the size of small shot, and transports, by means of her jaws, to the site of her castle. With a number of these masses, she first forms the *basis* or *foundation* of the whole. Next she raises the *walls* of a cell, which is about an inch in length and half an inch broad, and, before the *roof* is put on, in form resembles a *thimble*. This, after depositing an egg and a supply of honey and pollen, she covers in; and then proceeds to the erection of a second, which she finishes in the same manner, until the whole number, which varies from four to eight, is completed. The form of the whole nest, which, when finished, is a solid mass of stone, so hard as not to be easily penetrated by the blade of a knife, is an irregular oblong, of the same colour as the sand, and, to a casual observer, more resembling a splash of mud, than an artificial structure.

Fanny. How hard the poor bee must labour, to build such a strong house for her family! I should be afraid, too, that the nest would be frequently destroyed.

Miss Angerstein. That may sometimes happen, Fanny ; but, if you recollect, I told you she chose a place that was sheltered by a projection of some kind, which proves a sort of safeguard. There is another species of bee, called the *wood-piercing*, or *carpenter-bee*. It is a native of southern Europe, distinguished by beautiful wings of a violet colour, and found commonly in gardens. In the spring of the year they search for wood, proper to make a habitation for their young, and usually choose the decaying, upright props of arbours, or vines ; but will sometimes attack garden-seats, thick doors, and window-shutters. And when a piece of wood is fixed upon as suitable for her purpose, the mother-bee begins the process of boring with her strong mandibles ; first proceeding obliquely downwards, for about half an inch : she then changes her direction nearly parallel with the sides of the wood, for twelve or fifteen inches, making the tube about half an inch in diameter. This takes her several days. But as each of her eggs will require a separate apartment, she deposits one at the bottom of the cylinder, along with the requisite store of pollen and honey. She next lays on the roof, which is composed of the saw-dust that she

threw out when excavating the tunnel, cemented together by a glutinous substance from the animal's body. One cell being finished, she proceeds to another, which she furnishes and completes in the same manner; and so on, till she has divided the whole into ten or twelve apartments. As the first-laid egg must necessarily be hatched before the others, this industrious and provident mother does not construct her tunnel with *one* opening only; but at the lower end pierces *another* orifice, a kind of back-door, through which the insects produced by the first-laid eggs emerge into day.

Jane. And is it with her jaws alone that she saws the wood?

Miss Angerstein. I have read, Jane, that her peculiarly strong jaws are the only instruments she employs in these perforations. *Labour* and *patience* are the good qualities which these bees exhibit in the construction of their cells. But I will now tell you of another kind that displays considerable genius, and which may be termed hangers of tapestry, or upholsterers, as they line the holes excavated in the earth for the reception of their young, with an elegant coating of flowers or leaves. The most interesting of these species

is the *Apis Papaveris*, or *Poppy Bee*. This industrious little creature, as though fascinated with the colour most attractive to our eyes, invariably chooses for the hangings of her apartments, the most brilliant scarlet, selecting for its material the flowers of the wild poppy, which she dexterously cuts into the proper form. Her first process is to excavate, in some path-way, a burrow, cylindrical at its entrance, but swelled out below to the depth of about three inches. Having polished the walls of this little apartment, she next flies to the neighbouring field, cuts out oval portions of the flowers of poppies, seizes them between her legs, and returns with them to her cell; and though separated from the wrinkled petal of a half-expanded flower, she knows how to straighten their folds, and, if too large, to fit them for her purpose by cutting off the superfluous parts. Beginning at the bottom, she overlays the walls of her mansion with this brilliant tapestry, extending it also on the surface of the ground round the margin of the orifice. The bottom is rendered warm by three or four coatings, and the sides have never less than two. The little upholsterer having completed the hangings of her apartment, next fills it with pollen and honey,

to the height of about half an inch ; then, committing an egg to it, she wraps over the poppy-lining, so that even the roof may be of this material ; and, lastly, closes its mouth with a small hillock of earth.

Fanny. The bee may well be called *industrious* ; for it labours as hard in its wild state, as it does in the hives.

Miss Angerstein. Equally so, my dear ; though the common hive-bee, which so amply supplies us with delicious honey, of which my little Fanny is so fond, is quite a distinct species from those I have been describing ; for they live in *societies*, whereas those I mentioned are solitary insects.

Jane. I have often watched the bees come home from their excursions, most heavily laden.

Miss Angerstein. The principal object of the bees, when they fly from flower to flower, is to furnish themselves with *three* different materials : the *nectar of flowers*, from which they produce *honey* and *wax* ; the *pollen*, or fertilizing dust of the anthers, of which they make what is called *bee-bread*, serving as food both to old and young ; and the resinous substance called by the ancients *propolis*, used in various ways in rendering the hive secure, and in giving the finish to the combs.

Fanny. And that honey is a very nice thing, almost every little girl must allow. Elizabeth, will you repeat to us those pretty lines about a bee, that you wanted to teach me? They were so difficult, I could not learn them perfectly in one day; but I shall finish them when you have time to teach me again.

Miss Angerstein. Come, Elizabeth, repeat them to oblige her.

Elizabeth.

“Thou cheerful bee! come freely forth,
And travel round my woodbine bower!
Delight me with thy wand’ring hum,
And rouse me from my musing hour:
Oh! try no more those tedious fields,
Come taste the sweets my garden yields:
The treasures of each blooming mine,
The bud, the blossom—all are thine.

“And careless of this noon-tide heat,
I’ll follow as thy ramble guides;
To watch thee pause and chafe thy feet,
And sweep them o’er thy downy sides:
Then in a flow’r’s bell nestling lie,
And all thy envied ardour ply!
Then o’er the stem, tho’ fair it grow,
With touch rejecting, glance, and go.

“ O Nature kind ! O labourer wise !
 That roam'st along the summer's ray,
 Glean'st every bliss thy life supplies,
 And meet'st prepared thy wintry day.
 Go, envied go ; with crowded gates
 The hive thy rich return awaits :
 Bear home thy store in triumph gay,
 And shame each idler of the day.”

Miss Angerstein. It is a very beautiful little poem ; and I hope, Fanny, you will fulfil your intention of learning it perfectly.

Fanny. But what is meant by,

“ ——— with crowded gates
 The hive thy rich return awaits : ?”

Miss Angerstein. It refers to the assistance which the bee receives from its companions ; because, when a bee heavily laden arrives at the hive, she either stops at the entrance, or goes into the hive and walks upon the combs ; but whether she walks or stands, she keeps beating her wings. By the noise thus produced, which seems a call to some of her fellow-citizens, three or four go to her, and placing themselves around her, begin to lighten her of her load.

Emily. I have a question to ask about cochineal. You have put it down as an insect belonging to the same order as the grasshopper. When my little brother Charles had the hooping-cough, in the spring, he drank something that nurse called *cochineal-tea*. Was it made from this insect? It looked more like *seeds* than *insects*, that she poured the water on, and was so beautifully red. Will you tell me all about it, as I am quite puzzled what to think of it?

Miss Angerstein. With great pleasure, my dear; because the question shows how attentive you are to our conversations. I am never more highly gratified, than when I see your curiosity *properly* awakened. It is the only sure means of gaining information, and will prove a source of pleasure to you through life; for those who accustom themselves early to use their eyes, and pay attention to what is passing around them, can never be at a loss for amusement. I dare say you have all read that dialogue in the "*Evenings at Home*," entitled "*Eyes and no Eyes*," which exactly exemplifies what I have just said.

Emily. I do not think I have, for I do not recollect it.

Miss Angerstein. I will find it out for you, and then I hope you and Fanny will read it. At present we will speak of the cochineal insects, which are an extremely fruitful race; and many of them are very troublesome in stoves and green-houses, most of which have been brought over, with exotic plants, from other climates. The species of which nurse made the cochineal-tea, is a native of South America, where it is found more particularly on the *cactus opuntia*, or *prickly-pear tree*. In Jamaica, these insects are now also tolerably common; but the heavy rains, to which the West India islands are subject, often make the industry of the natives in rearing them entirely fruitless. When the young insects arrive at their full growth, they adhere to the leaf of the *cactus* in a torpid state; and it is at this period they are taken from the plant for use. Twice or thrice a week, the slaves appropriated to this employment go among the plants, and, with a bamboo-twigg shaped into the form of a pen, pick off carefully every full-grown insect they can find. These insects are soon converted into the state in which we receive them, by a very *simple* process, though not more *simple* than it is *cruel*. From the wooden bowl in which they

were collected, they are thickly spread upon a flat dish of earthen-ware, and placed alive over a charcoal fire, where they are slowly roasted until the downy covering disappears, and the aqueous juices of the animal are totally evaporated.

Elizabeth. What a dreadful death! Poor little creatures, could they not prepare them in any other way, so as to shorten their sufferings? It makes one shudder to hear of such tortures as they must experience.

Miss Angerstein. It is said this is the only way in which this valuable insect can be made useful; but it is deeply to be regretted, that a practice so repugnant to the feelings of humanity should be necessary to secure this precious dye.

Emily. Is that all that is done to them?

Miss Angerstein. While roasting, they are continually stirred about with a tin ladle; and sometimes water is sprinkled on them, to prevent their be reduced to a cinder, which would, of course, destroy their colour. When removed from the fire, they appear like so many dark, round, reddish seeds; so that your mistake, Emily, was a very natural one, for they preserve so little of the original form of the insect, that this

precious dye was long known and sought in Europe, before naturalists had determined whether it was an animal, a vegetable, or a mineral substance. It has been computed that there are imported into Europe no less then *eight hundred and eighty thousand pounds weight* of cochineal, every year.

Emily. I shall tell nurse about the cochineal. I am sure she will be as much surprised as I am; for I dare say she thinks it is a seed she uses. Fanny and I planted some in a *flower-pot*, but they would not come up, which surprised us very much; but now we know the reason. Is this the only species of the insect which is useful?

Miss Angerstein. Without the productions of another species of this insect, *the lac cochineal*, we should not have *sealing-wax*. These insects are found principally on the *figus religiosa*, and *figus Indiana*, and in the East Indies have the name of *gum-lac*. They are gathered from the trees of the uncultivated mountains on both sides of the Ganges, where nature has been so bountiful, that, were the consumption many times greater than it now is, the markets would be

fully supplied. The only trouble is in breaking down the branches and carrying them to market. *Stick-lac* is the natural state of this production, when unseparated from the twigs to which it adheres; *seed-lac* is its name when separated, pounded, and the greater part of the colouring-matter extracted by water; *lump-lac*, when melted and made into ashes; and *shell-lac* when the cells are liquified, strained, and formed into thin transparent laminæ.

Elizabeth. Then it is not the insect itself, but its *cell*, that is made use of.

Miss Angerstein. *Lac*, properly speaking, is merely the cell of the insect, formed by it from the sap of the tree on which it is found; but in what way I cannot explain to you. It is said that the sap of the tree is so nearly allied to the cell of the coccus, that it appears to have undergone very little change by its formation into these cells. The best *lac* is of a *deep red colour*.

Jane. Is it used for any thing else than the making of sealing-wax?

Miss Angerstein. Of the *shell-lac*, the natives of the eastern countries make ornamental rings, to decorate the arms of the females. They also form it into beads, necklaces, and other female

ornaments. It was formerly used in medicine; but is now confined principally to the making of sealing-wax, and to japanning, painting, and dyeing.

Fanny. You said shell-lac was formed into transparent *laminæ*. I do not know what that word means.

Miss Angerstein. It signifies thin plates or layers of the substance; and is the plural of the Latin noun *lamina*, which has been adopted in our language. We must now quicken our pace, or we shall be late.

Emily. While we are walking home, I think you will find something else to tell us: will you not? Some story of an insect?

Miss Angerstein. If you will be contented with an account of the white ants, I shall very willingly give it you, as I think you will find it amusing. In some countries, particularly in the East Indies, they are a dreadful nuisance; for when they find their way into houses or warehouses, nothing less hard than metal and glass escapes their ravages. Their favourite food is wood of all kinds; and so infinite is their number, and such is the expedition with which they proceed, that all the timber-work of a spacious

apartment is often destroyed in a few nights. These insects live in large clay nests, raised to the height of *twelve feet*, from whence they excavate tunnels all round, often to the extent of several hundred feet: from these they will descend below the foundation of a house, and rise again through the floors; or, boring through the posts and supports of a building, enter the roof, and construct their galleries in every direction. What is most remarkable, is, that when a post has any weight to support, these little creatures will, after having eaten all the inside, fill it with a sort of mortar, leaving only a track-way for themselves; and thus, as it were, convert it from wood into stone.

Emily. But how can they find out that the post supports any weight?

Miss Angerstein. It must be *instinct* alone that guides them; for in what other way they can find it out, I cannot conjecture. But as a proof that they can form this sort of mortar at their pleasure, I will relate a circumstance that I read in Mr. Forbes's "*Oriental Memoirs*," a most splendid and interesting work. During an absence of a few weeks, he had locked up a room containing some fine prints and drawings, in

English frames. Upon entering the room on his return, the glasses appeared to be very dull, and the frames covered with dust. On attempting to wipe it off, he was astonished to find the glasses fixed to the wall ; not suspended in frames as he left them, but completely surrounded by an incrustation cemented by the *white ants*, which had actually eaten up the frames and boards at the back, with the greater part of the paper, and left the glasses upheld by the incrustation.

Jane. How distressed he must have been !

Miss Angerstein. I dare say he was ; but not more so than another gentleman had reason to be, who, having left a valuable compound microscope in a warehouse at Tobago, for a few months, on his return he found a colony of a small species of white ant had established themselves in it, and had devoured most of the woodwork, leaving little besides the metal and glasses. But we are now at home, and I fear I have told you so much, that you will remember but little of this morning's conversation. Make haste.

CHAP. IX.

THE days flew rapidly and happily by, because the young people were always usefully employed, and the time of Alexander's return home was very near at hand. He had written his last letter in very high spirits, and had told them that he should leave Eaton about twelve o'clock on the 24th of July, which was *Election-Monday*; and if they did not know what that meant, he requested them to wait till they met, and he would explain all; for he had as much to tell, as they would have to ask. It now wanted only a week to this long-wished-for Monday; and as the time approached that was to restore this much-loved brother to his affectionate sisters, the little girls were never so happy as when talking of him, either among themselves or to Miss Angerstein, who very kindly entered into all their plans and feelings with the most affectionate interest. His little garden, which had always been attended to most carefully, was now visited

with double pleasure ; and this morning, on their way from the cow-house, they begged their kind instructress to go with them to see it, and to give her opinion whether the walks should be newly gravelled or not: they wishing it to be done, and the gardener thinking it would be as well without. Both parties, however, were willing to abide by Miss Angerstein's decision, who, upon reaching the garden, gave it as her opinion that nothing could look neater than it did ; and as the weather was so dry, she was afraid the new gravel would not bind together before Alexander's arrival, if laid down now, therefore she advised them to let it remain as it was. Not a weed was to be seen, and the flowers were tied up with the greatest neatness. The beautiful double white campanula was in high beauty, with roses of all descriptions ; and the white lily, whose pure white flowers, elevated upon their tall stalk, give an agreeable sensation of coolness to the eye. Under the sweet-brier hedge grew several sorts of periwinkle ; the large blue, the small double purple, and the white, most beautifully intermixed with low bushes of valerian, whose pretty red flower lasts from May till quite late in the autumn. The children looked at the garden

with evident pleasure, which was not a little increased by Miss Angerstein's praises of their attention and kindness in having kept it in such good order.

"I am so afraid," said Fanny, "that this *tricoloured antirrhinum* should be faded before Alexander comes home: it is so pretty now; and he never had any in his garden before."

"And I," said Jane, "hope that the new annual, the seed of which my aunt brought us from England, will flower while he remains with us."

"I think there is no doubt of it, Jane," replied Miss Angerstein, "for I saw it in flower, in the neighbourhood of London, in July and August, last year."

Elizabeth. Can you tell us the name of it? There was nothing on the paper which contained the seed, but "*a new annual.*"

Miss Angerstein. I do not know its name, though I have heard it called *coreopsis*; and I dare say it is of that species.

"Then, young ladies," said the gardener, "I am not to gravel the walks."

"Not this year, Mr. Saunderson; but next spring we shall be much obliged to you to do it," said Jane.

"Now then, my dears," said Miss Angerstein, "as this point is decided, let us proceed on our walk, for we are losing this fine morning." And they all immediately crossed the lawn, to reach the bridge over the burn, which was now very shallow from the long drought.

"As Alexander will be home soon," said Elizabeth, "may we this day finish the Sixth Class of animals, as we may not find another opportunity?"

Miss Angerstein. I think we had better do so; for when your brother arrives, I shall wish you to be with him as much as possible. And as these conversations might not interest him, you might have to wait a considerable time before we could discuss this last class; particularly as your papa intends taking either one or both of you with him into Ross-shire to-morrow, to spend a few days with your uncle and aunt, which leaves us only this morning to conclude the subject.

Elizabeth. We shall be delighted to go, for we always are so very happy there. My aunt has such a beautiful collection of shells and various curiosities, particularly fossils; and she is so patient, and so kind in answering all our questions, when she shows her cabinets to us. She has also a great many butterflies and insects, of different

kinds, which will be very interesting to us, now that we know a little more about them than we did before. May we take the little book of notes with us, to refresh our memories, and assist us in finding out the Orders ?

Miss Angerstein. Certainly you may. But I hope I need not caution you, Elizabeth, against making a display of the trifling increase of knowledge you have obtained on this subject ; for it is so little in comparison to what you have yet to learn, that, instead of pleasing your aunt, you will only make yourself ridiculous.

Elizabeth. Indeed, dear Miss Angerstein, I did not intend any thing of the kind ; but I thought I might be puzzled when I saw the butterflies, &c. and that our little book, containing the lists of the classes and orders, would assist in clearing my ideas.

Miss Angerstein. It will be an excellent opportunity of acquiring a little practical information, my love, and of comparing what you have already learnt, with the insects themselves ; and I hope you will the more easily understand your kind aunt's explanations, from the little insight you have gained of the system of animated nature.

Jane. I think we shall. At any rate, our

pleasure in seeing my aunt's collection will be greatly increased; because, what we cannot rightly understand from her, you will be kind enough to explain more fully when we return home.

Elizabeth. I always wish I knew something of shells; they are so beautiful, and must be so very interesting.

Miss Angerstein. Many people, who know nothing of them *scientifically*, are nevertheless very fond of collecting them, merely for their beauty. Every branch of natural history is well worth the attention of those who have time and leisure to bestow upon the study; and I think it desirable that a general view of the subject should form a part of the education of all young people; but to be intimately acquainted with all, can only be the lot of such, whose genius particularly directs them to it. In our conversation this morning, we shall say a few words about shells, (the study of which is called *conchology*),—as they form one of the Orders of the Sixth Class, *vermes*, or worms.

Jane. How many Orders does this class contain?

Miss Angerstein. Only five. This is the lowest class of animal being, nearly all the

species of which have slow locomotive powers. Their bodies are soft, fleshy, and destitute of articulated members: some of them have hard internal parts, and others have crustaceous coverings. In many of them the blood undergoes real circulation, but this is by no means common to the whole class. In some of them, eyes and ears are very perceptible; while others seem to enjoy only the senses of *taste* and *touch*, which are never wanting. Many have no distinct head, and most of them are without feet.

Elizabeth. This seems the most singular class we have yet met with.

Miss Angerstein. Of that you will be better able to judge, when we have become a little more acquainted with them; though this I will venture to say, that not one of the classes is better adapted to display the almighty power of the Creator, than this. For can you imagine any thing more wonderful than the property which some tribes of this class possess, that, if cut into any number of pieces, and in any direction, each part will become a perfect animal in itself.

Jane. How very surprising! I should suppose there was no possibility of destroying animals which cling to life with such perseverance.

Miss Angerstein. The whole of these creatures are very tenacious of life, some much more so than others ; for the common earth-worm will only allow of being cut into two parts, while the *polype* may even be turned inside out without injury ; and the dismembered parts of one polype will unite with those of another, and make a perfect polype. But here are the Orders.

Orders of *Vermes*, or Worms.

1st ORDER. *Intestina* : these are simple, naked animals, of a thread-like body, that live some of them within other animals, some in the water, and some in the earth ; as the ascarides, tape-worms, leeches, and common earth-worms.

2d ORDER. *Mollusca* ; or animals of a simple form, with members, but without shells. Most of them are inhabitants of the sea, and many of them possess a phosphorescent quality : as, slugs, cuttle-fish, star-fish, sea-anemone, the sea-urchin, and the night-shining nereis.

- 3rd ORDER. *Testacea*, are molluscæ, covered with calcareous shells, which they carry about with them; as, muscles, cockles, oysters, snails, barnacles, razor-shell, ship-worm, nautilus, cowry, &c. &c.
- 4th ORDER. *Zoophyta*, are compound animals, furnished with a kind of flowers, and having a vegetable root and stem; as coral, sponge, madre-pore, sea-oak, polype, &c.
- 5th ORDER. *Infusoria*, or animalcula; so extremely nimble as generally to be invisible to the naked eye.

Jane. You say many of the molluscæ possess a *phosphorescent* quality: what do you mean by that?

Miss Angerstein. The property of emitting light, as the elementary substance called phosphorus does. The *glow-worm*, among the insect class, is an example of this light.

Jane. What is phosphorus?

Miss Angerstein. It is a simple substance, found in a state of combination with the bones of animals, from which it is extracted. It was first

discovered by Brandt, a chemist of Hamburgh ; but the method of obtaining it remained a secret till it was a second time discovered, both by Kunckel and Boyle, in the year 1680.

Elizabeth. I do not suppose there is any thing very interesting to be learned about worms, they are such simple little wriggling things.

Miss Angerstein. With the common earth-worms you are all very well acquainted ; and you also know that your little brother Charles suffers greatly from the *thread-worms*, which are an extremely troublesome disease with many children. But you do not, perhaps, know, that a species of thread-worm eats into the skin in the West Indies, and its extraction occasions great trouble. The furia does the same in Finland and Sweden. The common hair-worm is said to occasion whitlows ; and the garden or dew-worms, are useful to vegetation, by loosening the soil.

Jane. Oh ! pray tell us about the Indian thread-worm.

Miss Angerstein. It is very commonly found in the East and West Indies, and is frequently *ten* and *twelve* feet in length, though not thicker than a coarse brown thread. It enters the naked feet of the slaves, and occasions a very great

irritation, and sometimes excites even fever and inflammation. It particularly attacks the muscles of the arms and legs, and is only to be extracted by a piece of silk or thread tied round its head. But the greatest caution is necessary in this operation, lest the animal, by being strained too much, should break; for if any part remains under the skin, it grows with redoubled vigour, and becomes a cruel and sometimes a fatal enemy.

Elizabeth. How hastily I judged! I did not expect any thing so curious about a worm. Is the furia of the same kind?

Miss Angerstein. It is of the same Order, but of a different species; of which, fortunately, there is but one known, for it is exceedingly venomous. It is only about half an inch long, of a carnation colour; but it has on each side a single row of close-pressed prickles. In Finland, Bothnia, and the northern provinces of Sweden, the people suffer most dreadfully from it. It creeps up the stalks of the sedge-grass and shrubs in the marshes, whence it is carried off by the wind; and if the naked skin of any person happen to be directly in its course, it immediately adheres and buries itself within. The first sensation is said

to be like that arising from the prick of a needle : this is succeeded by a violent itching of the part ; soon afterwards by acute pain, a red spot, at last by inflammatory fever, accompanied with swooning. In the course of two days, at the furthest, death follows, unless the worm be extracted immediately, which is very difficult to be done. Linnæus, as he was once collecting insects, was stung by a Fury in so dreadful a manner, that, for a little while, there was great doubt whether he would recover.

Elizabeth. Of how much science and knowledge the world would have been deprived, had Linnæus lost his life through that terrible little worm ! And how thankful I am that no such creature exists in our country !

Jane. What is the hair-worm ? Does it mean that it is covered with hair ?

Miss Angerstein. By no means, my love : it derived this name from the notion which is still prevalent among the common people, that it is produced from the *hair* of horses and other animals. Its scientific or Linnæan name is *Gordius*, which originated in the habit that it has of twisting itself into such peculiar contortions, as to

resemble a complicated *Gordian knot*. In this state it often continues for a considerable time, and then slowly disengaging itself, extends its body to the full length.

Elizabeth. How long is it when fully stretched?

Miss Angerstein. When quite full grown, it is ten or twelve inches long, and about the thickness of a horse's hair. It is common in our fresh waters, and particularly in such where the bottom is composed of soft clay, through which it passes with the greatest facility. It is sometimes found in the earth as well as in water, especially in gardens of a clayey soil, after rain. It is stated that the bite of this worm has been known to produce the complaint called a *whilow*, at least such is the popular opinion in Sweden.

Jane. This is a very short worm, compared to the Indian thread-worm.

Miss Angerstein. Which is also very short, compared to the *sea long worm*, which is of so very extraordinary a length, that it is almost impossible to fix any bounds to it. They are found on the coasts of Devonshire and Cornwall, and are also frequently dredged up by the fishermen in the Firth of Forth. The fishermen on the

coast of Devonshire assert that they are upwards of *thirty yards* in length; but Colonel Montague, (who has written on this subject in the *Linnaean Transactions*,) is of opinion, that as many feet must be the utmost, as none of the specimens he saw appeared to exceed *twenty feet*.

Elizabeth. All this is very wonderful. Still worms seem to occupy a very unimportant place in the animal world; and might, I should think, be very well dispensed with.

Miss Angerstein. The most insignificant insects and reptiles are of much more consequence, and have much more influence in the economy of nature, than people are generally aware of; and notwithstanding their minuteness, are mighty in their effects, from the circumstance of their numbers and great fecundity. The garden or lob-worm, though in appearance a small and despicable link in the chain of nature, yet, if lost, might make a lamentable chasm. For, besides that half the birds and many small quadrupeds are supported by them, worms seem to be the great promoters of vegetation. This they do by boring, perforating, and loosening the soil, rendering it pervious to the rain and the fibres of plants.

Jane. But gardeners cannot bear worms. I have seen them, when digging in the garden, cut them in two and throw them away.

Miss Angerstein. Because they occasion them a great deal of work, spoiling their gravel-walks, by throwing up such numbers of lumps of earth, called *worm-casts*, which you must sometimes have seen after rain. Helpless as they appear, these creatures are very vigilant in avoiding such animals as prey upon them. The mole, in particular, they avoid by darting to the surface of the earth, the instant they feel the ground move. Fishermen who are acquainted with this circumstance catch them in great numbers, by moving the earth with a dung-fork, in places where they expect to find them.

Emily. In the species you mentioned of one of the Orders, was the *night-shining nereis*. What sort of an animal is that?

Miss Angerstein. It belongs to the second order of this class, *mollusca*, and is so nimble as to escape examination by the naked eye. The body, which is composed of about twenty-three segments, or joints, is scarcely a tenth of an inch in length. It is quite pellucid, and its colour sea-green. These minute creatures inhabit

every sea, and are one of the causes of the luminous shining of the water in the night. They abound at every season of the year, but particularly in summer, before stormy weather, when they become more agitated and more luminous than at other times. So small are they, that myriads of them may be contained in a small cup of sea-water. They are said to emit a light superior to that of the glow-worm.

Elizabeth. *Sea-anemones* are mentioned in the same order. I never heard of them before. Animals, I know they must be, from being placed here ; but their name denotes a flower.

Miss Angerstein. To explain this, I must first describe the animal, which is of a somewhat oblong form, fixed by the base to the rocks ; and from the upper part of the body extend several *tentacula*, or *rays*, which are disposed in regular circles. The mouth is situated at the top, in the centre of the tentacula, and is furnished with crooked teeth. They are all capable of varying their figure ; but have obtained their name, because, when their *tentacula* are fully expanded, they have the appearance of full-blown flowers. Many of them are of very beautiful and brilliant colours. They feed on shell-fish and other

marine animals, which they draw into their mouths by means of their arms; and they eject the shells and other indigestible parts, through the same opening. When at Barmouth, in Wales, I had several of the common purple sea-anemone brought to me, which I kept in a glass vessel filled with sea-water, and which remained alive and in full vigour the whole time I staid there; but I was obliged to leave them behind me when I returned home.

Jane. I should like to see these animals: they certainly appear to have as little relation to animal as to vegetable life; yet, from their requiring food, it is evident they cannot be wholly vegetable.

Miss Angerstein. There is one species, called the *sea marigold*, which is not known to exist but in a particular spot in the island of Barbadoes. They were discovered in a cave containing a natural basin of sea water, in the middle of which was a rock almost covered with them, at all times of the year. They were seemingly fine radiated flowers, of a pale yellow, or bright straw-colour, slightly tinged with green. These had the appearance of a circular border of thick-set petals,

about the size of, and much resembling, those of the single garden marigold.

Elizabeth. I have seen what mamma called cuttle-fish; but it was like a piece of biscuit.

Miss Angerstein. What you have seen, my dear, is the bone of the officinal cuttle-fish, and which, on account of its lightness, is frequently called *sea-foam*, or *sea-biscuit*. This species of cuttle-fish was in great esteem by the ancients as food, and it is even yet used as such by the Italians, and the inhabitants of other countries on the shores of the Mediterranean. There is another species called the *eight-armed cuttle-fish*, which, in hot climates, sometimes measures twelve feet across its centre, and its arms are between forty and fifty feet long. When the Indians go out in their canoes, in places frequented by these fish, they are always in dread of their throwing their arms over, and sinking them; on which account, they are careful to take an axe with them, to cut them off, should they do so.

Fanny. What a monster! I am glad it does not come to our shores.

Miss Angerstein. We will now say something of the *testacea*, or *shell-fish*; for if we do not make haste, it will be breakfast-time before we

come to the end of this class, all the orders of which require a little notice.

Elizabeth. I am very desirous of hearing something about shells, they are so beautiful. My aunt told me once how they distinguished them, but I have quite forgotten.

Miss Angerstein. It is said, that we are indebted to Aristotle, the stagyrite philosopher, who was preceptor to Alexander the Great, for the judicious division of shells into three kinds. 1st, the *Univalves*, consisting but of one piece. 2nd, the *Bivalves*, consisting of two parts united by a hinge ; as the oyster and muscle. 3rd, the *Multivalves*, composed of many pieces.

Elizabeth. I hope I shall now remember these divisions, they appear so simple ; but I must put them down in my book, for fear of their again slipping from my memory.

Univalves, or shells of one piece.

Bivalves, or shells of two pieces.

Multivalves, or shells of many pieces.

Miss Angerstein. As an example of the univalves, I shall mention the *paper nautilus*, or *argonaut* ; because the inhabitant of this shell is supposed, in the early ages of society, to have furnished the original idea of navigation. When

it means to sail, this animal discharges a quantity of water from its shell, which renders it sufficiently buoyant to rise to the surface : it then extends two of its arms upward, which are each furnished at their extremity with an oval membrane, that serves as a sail. The other six arms hang over the sides of the shell, and supply the place of oars and rudder.

Emily. It is this sort of nautilus which is mentioned in that nice little book you gave me, "*Maritime Discoveries*," is it not ?

Miss Angerstein. It is, my dear.

Emily. But I have no idea what size this shell is, and I wish to know its colour.

Miss Angerstein. It is about six or eight inches in length, of a white or yellowish colour, and very little thicker than paper. They are found in the Mediterranean Sea, the Indian Ocean, and in the neighbourhood of the Cape of Good Hope. M. Le Vaillant, a celebrated French naturalist, who was employed by Louis XIV. to collect medals in the East, for the royal cabinet, observed great numbers of these singular creatures on the sea, near the Cape of Good Hope ; and as he was desirous of obtaining perfect specimens of the shells, he sent some

of his people into the water to catch them; but when the men had got their hands within a certain distance they always instantly sunk, and with all the art that could be employed, they were not able to lay hold of a single one. The *instinct* of the animal showed itself superior to *human subtlety*; and when their disappointed master called the men away from their attempts, they expressed themselves not a little chagrined at being outwitted by a fish.

Emily. Thank you, dear Miss Angerstein, for that little story: it was very amusing. But how could they sink so quickly?

Miss Angerstein. When any thing gives them the slightest disturbance, they retract their arms, and take in as much water as makes them heavier than that in which they swim, when they immediately sink to the bottom.

Jane. Now I hope you will give us an example of the Bivalves; though, as you just mentioned that the oyster belongs to this division, we all know what sort of shells are included in it. But I dare say you have something curious to tell us of some of the species.

Miss Angerstein. Time passes away so quickly, my love, while we chat so pleasantly, that I must

not give you a long account of each. I shall therefore only just mention, that pearls are produced both in oysters and muscles ; and give you a short account of the pinna, a sort of muscle, which has been more celebrated than any other fish, from the remotest periods of antiquity. They are usually found in the sand or mud, in an erect position, with their larger end a little open. In this position they are firmly fixed, by means of a fine and strong *byssus* or *silk*, the fibres of which are fastened to the gravel, sand, roots of marine plants, broken shells, &c. &c. The pinna, on the coast of Italy and Provence, (where it is fished up by means of iron hooks fixed on long poles,) is called the *silk-worm* of the sea. Stockings and gloves are manufactured from it, of an exquisite fineness, but too warm for common wear.

Jane. I thought you would tell us something curious, and what can be more so than this ? A fish making silk ! Have you ever seen any thing made of it ?

Miss Angerstein. Yes, Jane : I once saw, at the Egyptian-hall, in Piccadilly, London, a pair of gloves made from the silk of the pinna : they

were of an olive-green, which I was told was the original hue of the silk.

Elizabeth. Are these shells found nowhere but on the shores of the Mediterranean?

Miss Angerstein. A few years ago, a bed of these shells was discovered in Salcomb Bay, near Kingsbridge, in Devonshire. Many of them are annually taken, the fish being accounted a very palatable food; and when stewed for five or six hours, they become nearly as good as scallops, another sort of bivalve.

Jane. Of a multivalve shell, I have not the smallest idea, never having seen a shell composed of more than two pieces.

Miss Angerstein. Then I fear a description of them will never make you understand what they are like. Now I recollect, Jane, that you certainly have seen one, though you have not known it. Have you not a pincushion that your aunt brought you from Hastings, in Sussex, that you call your *acorn pincushion*?

Jane. Yes: there are two shells united together at the bottom, though separated in every other respect: the large one is a *wool* pincushion, and the small one is filled with emery.

Miss Angerstein. They are only united at the

bottom ; because it is the nature of these animals (which are called *bernacles* or *barnacles*) to adhere in clusters to rocks, shells, the bottoms of ships, or floating pieces of wood. If you look at your pincushions, when you go home, you will find that the shell is composed of several unequal and erect pieces. There is one species of the barnacle, which has derived its name of goose-bearing barnacle, from a fabulous notion formerly very prevalent, even among those who ought not to have been so deceived, that from them was bred a kind of goose, common in some parts of our island, called the barnacle goose. But time, and better information, have convinced us that this is not the case, though the shell still continues to bear the same name.

Jane. How ridiculous, to fancy a shell-fish could turn into a bird !

Miss Angerstein. It is a proof, my love, what a benefit the extension of science is to mankind ; since, in a state of ignorance, the human mind is naturally credulous, and allows of any event, however marvellous, to take firm hold of the imagination, and lay the understanding asleep.

Elizabeth. The next Order is *Zoophyta*, which contains corals, I see. I did not before know,

that the beautiful coral necklaces my uncle gave us, were belonging to the animal creation.

Miss Angerstein. The creatures that are ranked under the Order Zoophyta, seem to hold a middle rank between animals and vegetables. Most of them, deprived altogether of the powers of locomotion, are fixed by stems that take root in crevices of rocks, among sand, or in such other situations as nature has destined for their abode : these by degrees send off branches, till at length some of them attain the size and extent of large shrubs. The Zoophytes are usually considered under two divisions. The stony branches of the first division, which has the general appellation of *coral*, are hollow and full of cells, which are the habitations of animals resembling polype, medusæ, &c. The next division consists of such animals as have softer stems, and are, in general, not merely inhabitants of a stem or branch, but are themselves in the form of a plant. Those of this division which are best known, are the *corallines*, the sponges, and the polypes.

Elizabeth. Then our necklaces are the cells of the animals ?

Miss Angerstein. Yes, my dear. Its general appearance is that of a shrub deprived of leaves,

the stem being sometimes from three to six inches in diameter, and its whole height being usually from three to four feet. The interior, both of the stem and branches, is equal to marble in hardness.

Jane. Where is it found?

Miss Angerstein. The most valuable coral, as being the largest in size, and most compact in substance, comes from the East; though it abounds in the Mediterranean, particularly on the coasts of Tunis, Sardinia, and at the mouth of the Adriatic. Fishing for coral is, however, an object of great importance to the inhabitants of Marseilles, Catalonia, and Corsica; but the coral procured is comparatively small.

Emily. And the sponge we use, is that made by fish?

Miss Angerstein. That sponge is an animal production seems evident, from its alternately contracting and dilating its pores; from its shrinking from the touch whenever examined in its native waters; and from its absorbing nutriment from the fluid, in which it is, by nature, immersed: still it is so nearly allied to the vegetable race, as to induce many persons to doubt of its animal existence. It is a great object of commerce in

the Mediterranean Sea, and in several of the islands of the Grecian Archipelago, on the submarine rocks in the neighbourhood of which, it is found of large size and in great abundance. The reproduction of sponge is more rapid than would perhaps be imagined: it is to be found in perfection in places from which, only two years before, it has been entirely cleared.

Fanny. I shall tell nurse this; for one day, when I asked her what it was, she said she did not know, but thought it grew upon a tree, like cork.

Miss Angerstein. We have now only the last Order to mention, which is?

Jane. Infusoria, or Animalculæ.

Miss Angerstein. Animals of this Order are extremely simple in their form, and generally invisible without a magnifying power. They are chiefly found in infusions of animal and vegetable substances. Of these minute animals, the numbers are far greater than those of all the other parts of animated nature. They are found disseminated throughout all created matter: the air we breathe, our drink of every sort, and our most wholesome food, teem with myriads of these

creatures; and since the improvement of microscopes, numbers have been discovered which were before unknown. Before the invention of this curious optical instrument, a mite was thought to be the utmost limit of animated minuteness; but it is now well known, that there are numbers of creatures far more diminutive.

Elizabeth. That is not a pleasant idea: not to be able to breathe, without destroying the life of many animalculæ! How shocking!

Emily. Have you no story of an animalcula.

Miss Angerstein. Not one, Emily: nor have I time to chat much longer, for we are nearly arrived at home. But if it will amuse you, I will give you a description of the species called the *convallarian vorticella*, which is said to be found on the stalks of duckweed, and other aquatic plants, and is one of the most elegant of the whole tribe. To the naked eye the *convallarian vorticella* has the appearance of a white point. In the microscope it is seen to be *bell-shaped*, and not unlike the flower of the lily of the valley, or *convallaria majalis*, each individual having a long stem. It is remarkable for the very sudden and starting manner in which it performs its

motions ; contracting its stem rapidly, and in a kind of convulsive manner, and again gradually extending it to its former length.

Jane. But we are not likely to see all these wonders.

Miss Angerstein. Some of them you may : for instance, the *eels* (as they are called, from their thread-like shape) in paste, and in blighted wheat, may frequently be seen, without even the aid of a microscope.

Elizabeth. I hope our pleasant "Morning Conversations" are not to end now we have arrived at the last Class of Animated Nature. They are so interesting to me, and have given me so many new ideas, that I could wish them to continue all the year. Yet this is selfish, for they must be fatiguing to you.

Miss Angerstein. You have all apparently been so much pleased and amused, that I have found great pleasure in them also ; and if, when your brother leaves you, you are again inclined to resume the subject, you will find me very willing to bear my part in it. There still remain two of the Linnæan divisions of the natural world to be considered, the Vegetable Kingdom, and the Mineral Kingdom ; and to give you a general

idea of both these, as I have now done of the Animal Kingdom, might afford you an equal degree of amusement and instruction. Now, however, we must prepare for breakfast.

THE END.

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